

**Modulhandbuch**  
**Sales Engineering (ESE)**  
**SPO 34**

|                                                           |           |
|-----------------------------------------------------------|-----------|
| <b>Mathematics 1 .....</b>                                | <b>3</b>  |
| <b>Materials Science .....</b>                            | <b>5</b>  |
| <b>Engineering Mechanics 1 .....</b>                      | <b>7</b>  |
| <b>German as a Foreign Language 1 .....</b>               | <b>9</b>  |
| <b>Technical English 1 .....</b>                          | <b>11</b> |
| <b>Cost Accounting .....</b>                              | <b>13</b> |
| <b>Personal Selling and Sales Management.....</b>         | <b>15</b> |
| <b>Computer Science &amp; Applications.....</b>           | <b>17</b> |
| <b>Physics.....</b>                                       | <b>19</b> |
| <b>Engineering Mechanics 2 .....</b>                      | <b>22</b> |
| <b>German as a Foreign Language 2.....</b>                | <b>24</b> |
| <b>Technical English 2.....</b>                           | <b>26</b> |
| <b>Finance and Controlling .....</b>                      | <b>28</b> |
| <b>Business Administration.....</b>                       | <b>30</b> |
| <b>Statistics .....</b>                                   | <b>33</b> |
| <b>Machine Elements 1.....</b>                            | <b>36</b> |
| <b>3D-CAX.....</b>                                        | <b>39</b> |
| <b>Manufacturing and Production Systems.....</b>          | <b>41</b> |
| <b>B2B Marketing.....</b>                                 | <b>43</b> |
| <b>Management, Governance and Planning .....</b>          | <b>46</b> |
| <b>Scientific Work / Project .....</b>                    | <b>48</b> |
| <b>Machine Elements 2.....</b>                            | <b>50</b> |
| <b>Product Development and Product Management.....</b>    | <b>52</b> |
| <b>Innovative Value Design and Service Systems .....</b>  | <b>54</b> |
| <b>Operational and strategic Sales .....</b>              | <b>56</b> |
| <b>Value Chain Management 1 .....</b>                     | <b>58</b> |
| <b>AI in B2B Sales.....</b>                               | <b>60</b> |
| <b>International Business and Marketing.....</b>          | <b>63</b> |
| <b>Sales Lab: Negotiation Coaching.....</b>               | <b>65</b> |
| <b>Digital Sales and CRM.....</b>                         | <b>67</b> |
| <b>Case Study: Sales Project.....</b>                     | <b>69</b> |
| <b>Placement Semester / Internship .....</b>              | <b>71</b> |
| <b>Optional: International Semester – 6 modules .....</b> | <b>73</b> |
| <b>Studium Generale.....</b>                              | <b>75</b> |
| <b>Bachelor Thesis .....</b>                              | <b>77</b> |
| <b>Elective Module 1 – 4.....</b>                         | <b>79</b> |

## Module Number: 87001 ..... SPO-Version: 34

### Mathematics 1

|                                   |                                                      |
|-----------------------------------|------------------------------------------------------|
| <b>Degree Program</b>             | Sales Engineering – Bachelor of Engineering (B.Eng.) |
| <b>Module Manager</b>             | N.N.                                                 |
| <b>Modul Type</b>                 | Mandatory Module                                     |
| <b>Academic Semester</b>          | 1. Semester                                          |
| <b>Module Duration</b>            | 1 Semester                                           |
| <b>Number LV</b>                  | 1                                                    |
| <b>Offered</b>                    | Summer Semester                                      |
| <b>Credits</b>                    | 5 CP                                                 |
| <b>Workload Class</b>             | 90 Hours                                             |
| <b>Workload Self-Study</b>        | 60 Hours                                             |
| <b>Participation Requirements</b> | none                                                 |
| <b>Use in other SG</b>            | Mechatronics Engineering, Mechanical Engineering     |
| <b>Language</b>                   | English                                              |

**Module Objectives**

**Professional Competence**  
Students can apply the fundamentals of analysis, linear algebra and methods of scientific computing: They can formulate basic engineering problems mathematically and work on them systematically using suitable methods. They are also able to interpret results in the context of the task.

**Interdisciplinary Competence**  
Students are able to solve exercises in groups and discuss different solutions. They can present their results to others.

**Course Content** Fundamentals of analysis (elementary function, differential and integral calculus, Taylor series, sequences/series)  
Fundamentals of linear algebra (systems of equations, vector spaces, matrices, eigenvalues/eigenvectors)  
Complex numbers and complex functions  
Introduction to scientific computing with Python (NumPy/SciPy, Matplotlib, SymPy)

**Literature** Lecture notes and Jupyter notebooks for the lecture  
S. Boyd, *Introduction to Applied Linear Algebra*, Cambridge University Press  
K. A. Stroud, *Engineering Mathematics*, Red Globe Press  
K. A. Stroud, *Advanced Engineering Mathematics*, Red Globe Press

#### Included Courses (LV)

| LV-Nr. | Course Name   | Professor | Type <sup>1</sup> | SWS | CP |
|--------|---------------|-----------|-------------------|-----|----|
| 87101  | Mathematics 1 | N.N.      | V, Ü              | 6   | 5  |

<sup>1</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

**Module Examination** (Prerequisite for the Award of Credit Points)

| LV-Nr. | Type and Duration of Proof of Performance <sup>2</sup> | Determination of Module Grades | Comments |
|--------|--------------------------------------------------------|--------------------------------|----------|
| 87101  | PLK (120 Minutes)                                      | 100%                           |          |

**Requirements for Admission to the Module Exam**

Successful participation in the exercises

**Further Study-Related Feedback****Comments**

**Last Update:** 15.06.2024, N.N.

---

<sup>2</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

## Module Number: 87002

### Materials Science

SPO-Version: 34

|                                   |                                                      |
|-----------------------------------|------------------------------------------------------|
| <b>Degree Program</b>             | Sales Engineering – Bachelor of Engineering (B.Eng.) |
| <b>Module Manager</b>             | Prof. Dr. Rainer Börret                              |
| <b>Modul Type</b>                 | Mandatory Module                                     |
| <b>Academic Semester</b>          | 1. Semester                                          |
| <b>Module Duration</b>            | 1 Semester                                           |
| <b>Number LV</b>                  | 1                                                    |
| <b>Offered</b>                    | Summer Semester                                      |
| <b>Credits</b>                    | 5 CP                                                 |
| <b>Workload Class</b>             | 60 Hours                                             |
| <b>Workload Self-Study</b>        | 90 Hours                                             |
| <b>Participation Requirements</b> | none                                                 |
| <b>Use in other SG</b>            | Mechatronics Engineering, Mechanical Engineering     |
| <b>Language</b>                   | English                                              |

---

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Objectives</b> | <p><b>Professional Competence</b></p> <p>Students can describe the mechanical, electrical and optical properties of the various materials and are able to select the appropriate material for an application (e.g. optics, housing, circuit board). Students will be able to select materials on the basis of an engineering calculation in which they can determine whether the material properties fulfil the respective requirements.</p> <p><b>Interdisciplinary Competence</b></p> <p>Students can communicate in technical English and use the relevant material science and engineering vocabulary.</p> <p>The exercises take place in small groups, so students can train their interdisciplinary skills while working in teams. Results can be presented to the other groups and discussed.</p> |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### Course Content

- Atomic models
- crystal structures
- mechanical properties of materials
- failure
- Electrical properties of materials
- optical properties of materials
- phase diagrams

|                   |                                                                                                                                          |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Literature</b> | Recommendation:<br>William D. Callister Jr., David G. Rethwisch: Materials Science and Engineering, Wiley<br>Slides, Exercises on Canvas |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------|

**Included Courses (LV)**

| LV-Nr. | Course Name      | Professor     | Type <sup>3</sup> | SWS | CP |
|--------|------------------|---------------|-------------------|-----|----|
| 87102  | Material Science | Rainer Börret | V                 | 4   | 5  |

**Module Examination** (Prerequisite for the Award of Credit Points)

| LV-Nr. | Type and Duration of Proof of Performance <sup>4</sup> | Determination of Module Grades | Comments |
|--------|--------------------------------------------------------|--------------------------------|----------|
| 87102  | PLK (60 Minutes)                                       | 100%                           |          |

**Requirements for Admission to the Module Exam**

-

**Further Study-Related Feedback**

-

**Comments**

none

**Last Update:** 04.07.2024, Prof. Dr. Rainer Börret

---

<sup>3</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

<sup>4</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

## Module Number: 88001

### Engineering Mechanics 1

SPO-Version: 34

|                            |                                                      |
|----------------------------|------------------------------------------------------|
| Degree Program             | Sales Engineering – Bachelor of Engineering (B.Eng.) |
| Module Manager             | Prof. Dr. Miranda Fateri                             |
| Modul Type                 | Mandatory Module                                     |
| Academic Semester          | 1. Semester                                          |
| Module Duration            | 1 Semester                                           |
| Number LV                  | 1                                                    |
| Offered                    | Summer Semester                                      |
| Credits                    | 5 CP                                                 |
| Workload Class             | 60 Hours                                             |
| Workload Self-Study        | 90 Hours                                             |
| Participation Requirements | none                                                 |
| Use in other SG            | Mechatronics Engineering, Mechanical Engineering     |
| Language                   | English                                              |

---

#### Module Objectives

##### Professional Competence

Students will be able to analyze forces and moments (planar and spatial) for mechanical tasks in statics. They can determine the center of gravity of complex objects and draw free-body diagrams for complex systems. They will be able to analyze the Equilibrium equations. Moreover, they can perform analytical calculations of support reactions, including those for trusses. Additionally, they will be able to analyze internal normal and shear forces, as well as bending moment diagrams of beams. Furthermore, they can analyze and apply the principles of friction and hydrostatics.

##### Interdisciplinary Competence

Students are able to work on given tasks in small teams both within and outside of tutorials. Additionally, students can complete graded and ungraded quizzes throughout the entire semester, individually and in teams.

#### Course Content

Basic definitions  
Description of vectors, force, moment in Cartesian coordinate systems  
Components of a force and the resultant force for a system  
Center of gravity  
Equilibrium  
Degrees of freedom and support reactions  
Beam internal forces and moments  
Truss  
Friction  
Introduction to Hydrostatic

**Literature****English:**

Engineering Mechanics: Statics, J. L. Meriam, L. G. Kraige, John Wiley & Sons Inc; 7th edition (2011)

Engineering Statics: Open and Interactive, D. W. Baker, W. Haynes, 2020.

**German:**

Technische Mechanik Teil 1 Elastostatik - Gross, Hauger, Schröder, Wall, Springer Verlag Berlin Heidelberg New York Technische Mechanik 1 Statik –

Russell C. Hibbeler, Pearson Studium 2018 Technische Mechanik. Statik; Lehrbuch mit Praxisbeispielen - Richard, Hans Albert, Sander, Manuela 2008

**Included Courses (LV)**

| LV-Nr. | Course Name             | Professor                | Type <sup>5</sup> | SWS | CP |
|--------|-------------------------|--------------------------|-------------------|-----|----|
| 88101  | Engineering Mechanics 1 | Prof. Dr. Miranda Fateri | V                 | 4   | 5  |

**Module Examination (Prerequisite for the Award of Credit Points)**

| LV-Nr. | Type and Duration of Proof of Performance <sup>6</sup> | Determination of Module Grades | Comments |
|--------|--------------------------------------------------------|--------------------------------|----------|
| 88101  | PLK (90 Minutes)                                       | 100%                           |          |

**Requirements for Admission to the Module Exam**

*none*

**Further Study-Related Feedback**

*none*

**Comments**

-

**Last Update:** 17.06.2024, Prof. Dr. Miranda Fateri

---

<sup>5</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

<sup>6</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

## Module Number: 87003 German as a Foreign Language 1

SPO-Version: 34

|                            |                                                      |
|----------------------------|------------------------------------------------------|
| Degree Program             | Sales Engineering – Bachelor of Engineering (B.Eng.) |
| Module Manager             | Miguel Vázquez, Head of Language Center              |
| Modul Type                 | Mandatory Module for international students          |
| Academic Semester          | 1. Semester                                          |
| Module Duration            | 1 Semester                                           |
| Number LV                  | 1                                                    |
| Offered                    | Summer Semester                                      |
| Credits                    | 5 CP                                                 |
| Workload Class             | 60 Hours                                             |
| Workload Self-Study        | 90 Hours                                             |
| Participation Requirements | Formal: none<br>Content: none                        |
| Use in other SG            | Mechatronics Engineering, Mechanical Engineering     |
| Language                   | English and German                                   |

---

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Objectives</b> | <p><b>General</b></p> <p>This course, based on CEFR level A.1.1, is intended for students with no previous knowledge of the German language. Task-based teaching and other classroom activities, including individual group work and compulsory homework, will provide a variety of the basic techniques to use the main vocabulary and grammar of the language. At the end of the course, they will be able to talk about themselves and their areas of study and ask others about personal details, work, hobbies, and interests. The students will be able to use simple sentences and expressions in daily life situations and will be able to interact in a simple way provided the other person talks slowly and is prepared to help (see also CEFR <a href="https://www.coe.int/en/web/common-european-framework-reference-languages/the-cefr-descriptors">https://www.coe.int/en/web/common-european-framework-reference-languages/the-cefr-descriptors</a>). Course material will be provided by the library, the lecturer and the Language Center.</p> <p><b>Professional Competence</b></p> <p>Students will demonstrate a good level of communication and empathy and will master interactions with other people. They will develop an awareness of social and cultural conditions enabling them to act appropriately in complex situations. Students are able to apply strategies and methods for the formation and maintenance of networks in this area.</p> |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Interdisciplinary Competence

This course involves the integration of basic cultural, linguistic, geographical, and social studies to enhance learning. Students are introduced to German-speaking countries' customs, holidays, and traditional foods. They compare simple vocabulary and sentence structures between German and English or their native language. Geography lessons include identifying major German-speaking countries and cities on a map. Literature and music exposure involves reading stories and listening to German songs. Technology integration uses language learning apps and watching short German clips with subtitles (e.g. within Speexx). Role-playing helps practice everyday communication like greetings and ordering food. Social studies cover typical daily routines and school systems in Germany. Basic business etiquette includes learning formal greetings and simple business customs. This approach provides a well-rounded, contextual introduction to the German language and culture.

**Course Content** See description above.

**Literature** DaF Kompakt neu, Klett Verlag, Script

### Included Courses (LV)

| LV-Nr. | Course Name                    | Lecturer     | Type <sup>7</sup> | SWS | CP |
|--------|--------------------------------|--------------|-------------------|-----|----|
| 87103  | German as a Foreign Language 1 | Behzad Moini | Ü, S              | 4   | 5  |

### Module Examination (Prerequisite for the Award of Credit Points)

| LV-Nr. | Type and Duration of Proof of Performance <sup>8</sup> | Determination of Module Grades | Comments |
|--------|--------------------------------------------------------|--------------------------------|----------|
| 87103  | PLK (90 Minutes)                                       | 100% - not graded              |          |

### Requirements for Admission to the Module Exam

Participation in Practical Training, 70% of attendance

### Further Study-Related Feedback

-

### Comments

Mandatory module for international students at A1.1-level

**Last Update:** 06.03.2025, Miguel Vázquez, Head of Language Center

---

<sup>7</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

<sup>8</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

## Module Number: 87008

### Technical English 1

SPO-Version: 34

|                            |                                                      |
|----------------------------|------------------------------------------------------|
| Degree Program             | Sales Engineering – Bachelor of Engineering (B.Eng.) |
| Module Manager             | Miguel Vázquez, Head of Language Center              |
| Modul Type                 | Mandatory Module for German students                 |
| Academic Semester          | 1. Semester                                          |
| Module Duration            | 1 Semester                                           |
| Number LV                  | 1                                                    |
| Offered                    | Summer Semester                                      |
| Credits                    | 5 CP                                                 |
| Workload Class             | 30 Hours                                             |
| Workload Self-Study        | 120 Hours                                            |
| Participation Requirements | Formal: none<br>Content: none                        |
| Use in other SG            | Mechatronics Engineering, Mechanical Engineering     |
| Language                   | English                                              |

---

#### Module Objectives

##### General

This course is designed to support the receptive and productive skills of technical language competencies across four skills: speaking, listening, reading and writing at the reference level B2.1 of the Common European Framework of Reference for Languages. Students will be better able to understand the main content of technical texts and discussions from different subject areas and to communicate spontaneously in interdisciplinary contexts. A range of topics will provide the framework for the application of oral and written communicative competency.

Autonomous work outside the class as well as active in-class participation, interaction and feedback will be expected in class. To successfully complete the course, students will need to complete collaborative in-class assignments, submit coursework and give a presentation. The course consists of two modules.

In Module 1 we will focus on the revision of grammar structures in a technical context. New vocabulary and expressions will be explained and applied. The vocabulary is presented in authentic texts and credible scenarios, ensuring maximal practicality for the students. Teaching materials related to the students' major fields of study form the framework for the development and application of further, often subject-specific language skills, (that) are required for effective language competence in the technical field. In addition, more complex technical forms of written and oral communication are analyzed and actively produced.

##### Professional Competence

Professional competence (social skills und ability to work independently): Students must demonstrate a high level of communication and empathy in their professional life. Therefore, successful interactions with other people are practiced in a task-based training. The development of an awareness of social and cultural conditions with the goal to act appropriately in complex situations constitute another important block in this

lecture. Students will learn strategies and methods for the formation and maintenance of networks in this area.

### **Interdisciplinary Competence**

In this technical English lecture, "Interdisciplinary Competence" integrates various fields and communication skills. Students learn essential technical vocabulary and grammar, focusing on terms used in engineering, IT, and science. They develop writing skills by creating simple technical descriptions and reports. Reading comprehension is enhanced through simplified technical articles and manuals. Listening skills are improved with short technical lectures and videos, emphasizing note-taking. Presentation skills are built through short technical presentations using visual aids. Practical communication is practiced via role-playing technical scenarios. Collaborative projects apply technical English in group settings. Real-world case studies are discussed to identify key issues and solutions. Cultural competence is developed by understanding international technical communication styles.

**Course Content** See description above.

**Literature** Script, Books: Vocabulary and Grammar (Nick Brieger, Alison Pohl - Summertown Publishing Ltd.)

### **Included Courses (LV)**

| LV-Nr. | Course Name         | Lecturer    | Type <sup>9</sup> | SWS | CP |
|--------|---------------------|-------------|-------------------|-----|----|
| 87104  | Technical English 1 | Doris Düwel | Ü, S              | 2   | 5  |

### **Module Examination (Prerequisite for the Award of Credit Points)**

| LV-Nr. | Type and Duration of Proof of Performance <sup>10</sup> | Determination of Module Grades | Comments |
|--------|---------------------------------------------------------|--------------------------------|----------|
| 87104  | PLK (90 Minutes)                                        | 100% - not graded              |          |

### **Requirements for Admission to the Module Exam**

Participation in Practical Training, 70% of attendance

### **Further Study-Related Feedback**

-

### **Comments**

Mandatory Module for German students at B2.1-level

**Last Update:** 06.03.2025, Miguel Vázquez, Head of Language Center

---

<sup>9</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

<sup>10</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

## Module Number: 63001

### Cost Accounting

SPO-Version: 34

|                            |                                                           |
|----------------------------|-----------------------------------------------------------|
| Degree Program             | Sales Engineering – Bachelor of Engineering (B.Eng.)      |
| Module Manager             | Prof. Dr. Marc Falko Schrader                             |
| Modul Type                 | Mandatory Module within the study focus Sales Engineering |
| Academic Semester          | 1. Semester                                               |
| Module Duration            | 1 Semester                                                |
| Number LV                  | 1                                                         |
| Offered                    | Summer Semester                                           |
| Credits                    | 5 CP                                                      |
| Workload Class             | 60 Hours                                                  |
| Workload Self-Study        | 90 Hours                                                  |
| Participation Requirements | none                                                      |
| Use in other SG            | none                                                      |
| Language                   | English                                                   |

---

#### Module Objectives

##### Professional Competence

Students gain the following subject-specific competencies:

- Explaining cost concepts: Classification and categorization of costs (e.g., fixed vs. variable costs, direct vs. indirect costs).
- Application of cost allocation methods: Ability to allocate costs to cost centers, cost objects (products, services), and production processes.
- Cost calculation: Proficiency in calculating product and service costs using different costing methods such as full costing, marginal costing, and direct costing.
- Break-even analysis: Ability to determine the break-even point and interpret the results for decision-making purposes.
- Use of performance measurement tools: Use of performance indicators such as the contribution margin and assessment of its relevance to profitability analysis.

##### Interdisciplinary Competence

- Problem-solving: Ability to analyze business problems and propose solutions.
- Decision-making: Development of decision-making skills.
- Analytical thinking: Enhancement of analytical abilities.
- Teamwork and communication: Strengthening collaboration and communication skills.
- Critical thinking: Ability to critically assess.

## Course Content **Cost Concepts and Classification**

- Definition and categorization of costs (e.g., direct vs. indirect, fixed vs. variable, sunk costs).
- Overview of cost types: material costs, personnel costs, operating costs, depreciation, etc.
- Understanding the role of cost accounting in business decision-making.

## **Cost Allocation and Cost Centers**

- Methods for allocating costs to cost centers and cost objects (e.g., activity-based costing, allocation bases).
- Introduction to cost center accounting and performance measurement.
- Understanding how cost centers contribute to overall business performance and cost control.

## **Costing Methods**

- **Full Costing (Absorption Costing):** Allocation of both fixed and variable costs to products or services.
- **Marginal Costing (Variable Costing):** Allocation of only variable costs to products, treating fixed costs separately.
- **Direct Costing:** Direct allocation of costs to products/services without considering fixed costs.
- Advantages and limitations of each costing method and their impact on financial decision-making.

## **Cost-Volume-Profit Analysis (Break-even Analysis)**

- Understanding the relationship between cost, volume, and profit.
- Calculation of the break-even point and analysis of its strategic implications for pricing, production, and profit planning.
- Use of break-even analysis to assess the financial viability of business projects.

## **Cost and Performance Measurement**

- Analysis of performance using key metrics such as contribution margin and profitability analysis.
- Evaluation of operational efficiency and effectiveness based on cost data.
- Understanding the role of cost data in performance management and strategic decision-making.

**Literature** Gunther Friedl, Christian Hofmann, Burkhard Pedell, Cost Accounting  
World Scientific (2023)

## **Included Courses (LV)**

| LV-Nr. | Course Name     | Professor         | Type <sup>11</sup> | SWS | CP |
|--------|-----------------|-------------------|--------------------|-----|----|
| 63101  | Cost Accounting | external lecturer | V                  | 4   | 5  |

## **Module Examination (Prerequisite for the Award of Credit Points)**

| LV-Nr. | Type and Duration of Proof of Performance <sup>12</sup> | Determination of Module Grades | Comments |
|--------|---------------------------------------------------------|--------------------------------|----------|
| 63101  | PLK (60 Minutes)                                        | 100%                           |          |

<sup>11</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

<sup>12</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

**Module Number: 63002**

**SPO-Version: 34**

## **Personal Selling and Sales Management**

|                                   |                                                           |
|-----------------------------------|-----------------------------------------------------------|
| <b>Degree Program</b>             | Sales Engineering – Bachelor of Engineering (B.Eng.)      |
| <b>Module Manager</b>             | Prof. Dr. Alexander Grohmann                              |
| <b>Modul Type</b>                 | Mandatory Module within the study focus Sales Engineering |
| <b>Academic Semester</b>          | 1. Semester                                               |
| <b>Module Duration</b>            | 1 Semester                                                |
| <b>Number LV</b>                  | 1                                                         |
| <b>Offered</b>                    | Winter Semester, Summer Semester                          |
| <b>Credits</b>                    | 5 CP                                                      |
| <b>Workload Class</b>             | 60 Hours                                                  |
| <b>Workload Self-Study</b>        | 90 Hours                                                  |
| <b>Participation Requirements</b> | none                                                      |
| <b>Use in other SG</b>            | none                                                      |
| <b>Language</b>                   | English                                                   |

---

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Objectives</b> | <p><b>Professional Competence</b></p> <p>The students can apply and describe the basic concepts of business-to-business sales in order to evaluate the principles of personal selling.</p> <p>The students are able to classify and differentiate the job profile in modern b2b sales organisations in the context of other job profiles. They can differentiate and analyze sales as a corporate function from other corporate functions such as HR, product management or the finance department. The students can describe the basic principles of personal selling. They are able to recognize and classify current and future topics in sales in order to be able to react to a dynamic business world. They are able to define, categorize and discuss the very basics of hybrid selling, social media and AI in Sales.</p> <p>They can assess the relevance of ecological responsibility in the sales sector and contribute to a sustainable economy. The students are able to use target market-oriented information effectively and explain communication strategies. The students can negotiate ethically in an international context. They can use various negotiation strategies and tactics and represent sales objectives as well as know the basic principles of psychological selling.</p> <p><b>Interdisciplinary Competence</b></p> <p>Through spontaneous short presentations and negotiation training, the students strengthen their self-confidence and increase their self-assurance. The students are able to take economic, ecological and ethical aspects into account. They can design, plan, prepare and implement projects and are able to communicate appropriately and effectively using selected media. The students are trained to research information, to evaluate the quality of the sources found and to present or discuss these in a structured manner.</p> |
| <b>Course Content</b>    | <p>Career profile sales, roles and functions in the organization, tasks of sales, everyday business, sales process, customer contact, making appointments, product presentation, presentation technique, negotiation, negotiation technique, "highlights" of sales psychology, sales in the context of ecology, products, industries and cultures, effects of digitalization on technical sales, sales tools</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

## Literature

Armbruster, J. (2020): B2B Sales Degree.  
Buhr, A. (2019): Vertrieb geht heute anders: Das Ende des Verkaufens.  
Cuevas, J.M., Donaldson, B. and Lemmens, R. (2016): Sales Management. Strategy, Process and Practice. 4th Edition.  
Englander, D. (2015): The B2b Sales Blueprint. A hands-on-Guide to generate more Leads, closing more Deals, and working less.  
Fisher, R. and Ury, W. (2012): Getting to Yes: Negotiating an agreement without giving in (rev. Ed.), Random House.  
Gitomer, J. (2015): Jeffrey Gitomer's Sales Bible. The Ultimate Sales Resource.  
Kotler, P. et. Al.: HBR's 10 Must Reads on Sales (The HBRs 10 Must Reads Series), Harvard Business Review.  
Merit (2016): The next Generation of B2B Buyers. How the Millenials Business Buyers changing B2b Sales & Marketing. Harisburg, Chicago, San Francisco, Portland.  
Rackham, R. (2021). SPIN® -Selling, Rouledge.  
Ropponen, J. (2019): Sales Habits of Winners. Master the Fundamentals of B2B Sales with easy-to-understand Checklists.  
Stadelmann, M., Pufahl, M. and Laux D.D. (2020): CRM goes digital.  
www.saleshacker.com: Best 150+ Sales Tools. Update 2020.  
Ury, W. (1993): Getting Past No: Negotiating in Difficult Situations, Random House.

## Included Courses (LV)

| LV-Nr. | Course Name                           | Professor                    | Type <sup>13</sup> | SWS | CP |
|--------|---------------------------------------|------------------------------|--------------------|-----|----|
| 63102  | Personal Selling and Sales Management | Prof. Dr. Alexander Grohmann | V, Ü               | 4   | 5  |

## Module Examination (Prerequisite for the Award of Credit Points)

| LV-Nr. | Type and Duration of Proof of Performance <sup>14</sup> | Determination of Module Grades | Comments |
|--------|---------------------------------------------------------|--------------------------------|----------|
| 63102  | PLK 90 Min<br>PLS                                       | PLK 60%<br>PLS 40%             | English  |

## Requirements for Admission to the Module Exam

*Presentation document, handout/poster*

## Further Study-Related Feedback

*none*

## Comments

*none*

**Last Update:** 08.09.2025, Prof. Dr. Alexander Grohmann

<sup>13</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

<sup>14</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

## Module Number: 63003

### Computer Science & Applications

SPO-Version: 34

|                                   |                                                           |
|-----------------------------------|-----------------------------------------------------------|
| <b>Degree Program</b>             | Sales Engineering – Bachelor of Engineering (B.Eng.)      |
| <b>Module Manager</b>             | Prof. Dr. Alexander Grohmann                              |
| <b>Modul Type</b>                 | Mandatory Module within the study focus Sales Engineering |
| <b>Academic Semester</b>          | 2. Semester                                               |
| <b>Module Duration</b>            | 1 Semester                                                |
| <b>Number LV</b>                  | 1                                                         |
| <b>Offered</b>                    | Winter Semester, Summer Semester                          |
| <b>Credits</b>                    | 5 CP                                                      |
| <b>Workload Class</b>             | 60 Hours                                                  |
| <b>Workload Self-Study</b>        | 90 Hours                                                  |
| <b>Participation Requirements</b> | none                                                      |
| <b>Use in other SG</b>            | none                                                      |
| <b>Language</b>                   | English                                                   |

---

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Objectives</b> | <p><b>Professional Competence</b></p> <p>Students are able to solve engineering-specific problems using appropriate IT application systems and to present information. Students can apply the fundamentals of computer science and programming and evaluate, process, and present a wide variety of sample data sets. By acquiring fundamental theoretical and practical knowledge in the field of computer science, students are able to explain and evaluate essential principles and concepts of computer science. In particular, they can describe and differentiate between “core” computer science, products, and applications.</p> <p>Furthermore, students can explain selected programming languages and their logic. Through an in-depth introduction to a selected programming language (e.g. Python), students are able to write small programs themselves, especially for data processing. Students can take modern data center architectures into account in their programming in order to work in a significantly more sustainable manner.</p> <p>Students can integrate and apply the concepts of data processing and assess their significance for engineers. They are able to analyze data, especially statistical data and visualization techniques.</p> <p><b>Interdisciplinary Competence</b></p> <p>Students are able to independently work on and solve application-oriented exercises.</p> |
| <b>Course Content</b>    | <p>Students understand the fundamentals of computer science and programming. They also develop the ability to apply the methods they have learned in relation to their major field of study.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Literature</b>        | <p>Brookshear, J.G. and Brylow, D. (2021): Computer Science: An Overview (13th ed.), Pearson.</p> <p>Ernst, H., Schmidt, J. and Beneken, G. (2020): Grundkurs Informatik. Grundlagen und Konzepte für die erfolgreiche IT-Praxis – Eine umfassende, praxisorientierte Einführung, Springer Vieweg Verlag.</p> <p>Matthes, E. (2023): Python Crash Course (3rd ed.), No Starch Press.</p> <p>Tanenbaum, A.S. and Bos, H. (2023): Modern Operating Systems (5th ed.), Pearson.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

**Included Courses (LV)**

| LV-Nr. | Course Name                    | Professor                    | Type <sup>15</sup> | SWS | CP |
|--------|--------------------------------|------------------------------|--------------------|-----|----|
| 63103  | Computer Science & Application | Prof. Dr. Alexander Grohmann | V, Ü               | 4   | 5  |
|        |                                |                              |                    |     |    |

**Module Examination (Prerequisite for the Award of Credit Points)**

| LV-Nr. | Type and Duration of Proof of Performance <sup>16</sup> | Determination of Module Grades | Comments |
|--------|---------------------------------------------------------|--------------------------------|----------|
| 63103  | PLK (90 Minutes)                                        | 100%                           |          |

**Requirements for Admission to the Module Exam**

*none*

**Further Study-Related Feedback**

*none*

**Comments**

*none*

**Last Update:** 08.09.2025, Prof. Dr. Alexander Grohmann

---

<sup>15</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

<sup>16</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

## Module Number: 88005 Physics

SPO-Version: 34

|                            |                                                           |
|----------------------------|-----------------------------------------------------------|
| Degree Program             | Sales Engineering – Bachelor of Engineering (B.Eng.)      |
| Module Manager             | Prof. Dr. Axel Löffler                                    |
| Modul Type                 | Mandatory Module within the study focus Sales Engineering |
| Academic Semester          | 2. Semester                                               |
| Module Duration            | 1 Semester                                                |
| Number LV                  | 1                                                         |
| Offered                    | Winter Semester                                           |
| Credits                    | 5 CP                                                      |
| Workload Class             | 60 Hours                                                  |
| Workload Self-Study        | 90 Hours                                                  |
| Participation Requirements | Formal: none<br>Content: none                             |
| Use in other SG            | Mechatronics Engineering, Mechanical Engineering          |
| Language                   | English                                                   |

---

### Module Objectives

#### Professional Competence

##### ***Know That***

The students are able to correctly **apply** the **scientific vocabulary** in a given physical context. In addition, they are able to **quote** the **definitions** of the scientific terms. Students can describe basic physical quantities and units and can work confidently with physical formulas and equations.

##### ***Know Why***

The students are able to **provide examples** concerning the **definitions** of scientific terms and the application of specific **methods**. Moreover, they are able to **explain why** the application of a specific method to a given problem is **effective**.

##### ***Know How***

The students are able to **analyse** given problems, to **select** and **apply appropriate methods** to solve the given problems, thereby **adapting** the standard solution processes to problem specific needs. The students can plan, execute and evaluate experiments. Furthermore, they can estimate the effect of measurement uncertainties on the final result of the experiments.

#### Interdisciplinary Competence

The students are able to **self-organize their learning process**, including weekly **repetition of** and **reflection on** the course material, doing **additional exercises**, deepening their knowledge by **literature study** and **preparing questions** to the lecturer. Ideally, this takes place **in teamwork** with their co-students.

**Course Content** ***Physical Quantities and Units of Measurement***

Definitions of scientific terms: observables, measurements, SI units (metrical system)  
Physical quantities: measure numbers and units, comparison of physical quantities, multiplication and addition of physical quantities, unit conversion, basic physical quantities in the context of mechanics, treatment of uncertainties in measurements, how to solve a basic physical problem  
The process of scientific reasoning will be trained using basic models and test cases from the following disciplines:

***Kinematics and Dynamics of Translational Movements from the perspective of physics***

Definitions of scientific terms: kinematic quantities (location, velocity, acceleration), mass, force, energy, work, power, momentum  
Principles of classic mechanics: Newton's axioms, equations of motion, friction, examples (freefall, superimposed movements, inclined plane, impact movement, etc.), inertial forces

***Kinematics and Dynamics of Rotational Movements from the perspective of physics***

Definitions of scientific terms: kinematic quantities (angle, angular velocity, angular acceleration), moment of inertia, torque, energy, work, power, angular momentum  
Principles of classic mechanics: Newton's axioms, equations of motion, friction, examples (hammer throw, turntable, rolling motion, etc.), inertial forces

***Kinematics and Dynamics of Mechanical Oscillations from the perspective of physics***

Definitions of scientific terms: (harmonic) oscillation, restoring force/momentum, frequency and circular frequency, period duration  
Basic examples (spring pendulum, thread pendulum), damped oscillations, externally driven oscillations, superimposed oscillations

***Physics Laboratory***

Planning, execution and evaluation of physical experiments; estimation and evaluation of measurement uncertainties; the competences are trained doing two experiments: M1 (Maxwell's wheel – rolling movement) and S1 (mechanical oscillations)

**Literature**

R. A. Serway, J. W. Jewett: *Physics for Scientists and Engineers with Modern Physics*, Brooks Cole Publishers, 2018  
D. C. Giancoli: *Physics for Scientists & Engineers with Modern Physics*, Global Edition, Pearson, 2023  
R. Shankar: *Fundamentals of Physics I: Mechanics, Relativity, and Thermodynamics*, Expanded Edition, Open Yale Courses, 2019

**Included Courses (LV)**

| LV-Nr. | Course Name | Professor              | Type <sup>17</sup> | SWS | CP |
|--------|-------------|------------------------|--------------------|-----|----|
| 88203  | Physics     | Prof. Dr. Axel Löffler | V, Ü, L            | 4   | 5  |

<sup>17</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

### Module Examination (Prerequisite for the Award of Credit Points)

| LV-Nr. | Type and Duration of Proof of Performance <sup>18</sup> | Determination of Module Grades | Comments                                                                        |
|--------|---------------------------------------------------------|--------------------------------|---------------------------------------------------------------------------------|
| 88203  | PLK – written exam (90 minutes)                         | 100%                           | <b>40</b> of 90 points: passed (4.0)<br><b>80</b> of 90 points: excellent (1.0) |

#### Requirements for Admission to the Module Exam

The students have to be **present at 75%** of the given courses up to the last date of signing off for the exam.

In addition, they have to **complete** the following **6 MatlabAcademy** self-paced **online courses**:

Matlab Onramp, Simulink Onramp, Statistics Onramp, Optimization Onramp, Introduction to Symbolic Math (with Matlab), Introduction to Linear Algebra (with Matlab).

Finally, the students have to **carry out two laboratory experiments** at the central physics laboratory (experiments M1 and S1). The **laboratory reports** for each of the two experiments have to be graded as **“passed”**.

#### Further Study-Related Feedback

**Feedback** on questions and answers both from the students and the lecturer.

#### Comments

The exam takes place as an **online-written exam** using **DigiExam** and **MatlabGrader**. The exam is **graded automatically**. The students may **run** their scripts **as often as they like** and **submit** them **5 times**.

Points are only awarded for correct assignments of variables. In particular, no points are awarded if there are any syntactical errors in the script.

**Last Update:** 06.03.2025, Prof. Dr. Axel Löffler

---

<sup>18</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

## Module Number: 88004

### Engineering Mechanics 2

SPO-Version: 34

|                            |                                                           |
|----------------------------|-----------------------------------------------------------|
| Degree Program             | Sales Engineering – Bachelor of Engineering (B.Eng.)      |
| Module Manager             | Prof. Dr. Miranda Fateri                                  |
| Modul Type                 | Mandatory Module within the study focus Sales Engineering |
| Academic Semester          | 2. Semester                                               |
| Module Duration            | 1 Semester                                                |
| Number LV                  | 1                                                         |
| Offered                    | Winter Semester                                           |
| Credits                    | 5 CP                                                      |
| Workload Class             | 60 Hours                                                  |
| Workload Self-Study        | 90 Hours                                                  |
| Participation Requirements | Formal: Completed Engineering Mechanics 1                 |
| Use in other SG            | Mechatronics Engineering, Mechanical Engineering          |
| Language                   | English                                                   |

---

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Objectives</b> | <p><b>Professional Competence</b></p> <p>The students can calculate the mechanical stress of statically determined elastic components and simple assemblies taking into account the tensile, compressive, shear, torsion and bending loads. Students will be able to analyze the problems regarding the state of stress (uni and biaxial loading conditions) and generalized law of elasticity.</p> <p><b>Interdisciplinary Competence</b></p> <p>Students are able to work in a team while solving exercises. They can also use the theoretical procedures for understanding the practical applications. They will be able to connect and address the questions of other courses such as construction of elements. The students are able to present their own solutions concisely. They can conduct assignments and quizzes on their own and also in a team. They can also discuss the industrial application of theoretical studies in teams.</p> |
| <b>Course Content</b>    | <p>Normal Strain under Axial Loading</p> <p>Stress-Strain Diagram</p> <p>True Stress and True Strain</p> <p>Hooke's Law; Modulus of Elasticity</p> <p>Elastic versus Plastic Behavior of a Material</p> <p>Poisson's Ratio</p> <p>Uniaxial stress conditions: Tensile, Compression, Shear, Torsion and Bending</p> <p>Generalized Hooke's Law Transformations of Stress and Strain</p> <p>Principal Stresses: Construction of Mohr's Circle (biaxial stress)</p> <p>General State of Stresses in Thin-Walled Pressure Vessels</p> <p>Equivalent Stresses, Combined Loading Conditions</p>                                                                                                                                                                                                                                                                                                                                                           |

## Literature

English:

Ferdinand P. Beer, E. Russell Johnston, John T. Dewolf, David F. Mazurek Gross, Hauger, Schröder, Wall, Wriggers; (2014) Mechanics of Materials - McGraw-Hill Education

D. K. Singh, (2014) Strength of Materials – CRC Press, ISBN-10: 9781482245714

German:

Altenbach, Holm (2016): Holzmann/Meyer/Schumpich Technische Mechanik Festigkeitslehre. Wiesbaden: Springer Fachmedien Wiesbaden

Arndt, Klaus-Dieter; Brüggemann, Holger; Ihme, Joachim (2021). Festigkeitslehre für Wirtschaftsingenieure: Springer, eBook ISBN 978-3-658-33548-9

Technische Mechanik. Statik - Reibung - Dynamik - Festigkeitslehre - Fluidmechanik. 32. Aufl. 2017. Wiesbaden, s.l.: Springer Fachmedien Wiesbaden. Online verfügbar unter <http://dx.doi.org/10.1007/978-3-658-16203-0>.

Hauger, Werner; Krempaszy, Christian; Wall, Wolfgang A. (2017): Aufgaben zu Technische Mechanik 1–3. Statik, Elastostatik, Kinetik. 9. Aufl. 2017. Online verfügbar unter <http://dx.doi.org/10.1007/978-3-662-53344-4>.

Johannes Wandinger (2018): Technische Mechanik 1-3. Online verfügbar unter <http://wandinger.userweb.mwn.de/index.html?101>, zuletzt aktualisiert am 30.01.2018.

## Included Courses (LV)

| LV-Nr. | Course Name             | Professor                | Type <sup>19</sup> | SWS | CP |
|--------|-------------------------|--------------------------|--------------------|-----|----|
| 88202  | Engineering Mechanics 2 | Prof. Dr. Miranda Fateri | V, L               | 4   | 5  |

## Module Examination (Prerequisite for the Award of Credit Points)

| LV-Nr. | Type and Duration of Proof of Performance <sup>20</sup> | Determination of Module Grades | Comments |
|--------|---------------------------------------------------------|--------------------------------|----------|
| 88202  | PLK (90 Minutes)                                        | 100%                           |          |

## Requirements for Admission to the Module Exam

none

## Further Study-Related Feedback

none

## Comments

none

**Last Update:** 18.06.2024, Prof. Dr. Miranda Fateri

<sup>19</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

<sup>20</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

**Module Number: 87006**

**SPO-Version: 34**

## **German as a Foreign Language 2**

|                                   |                                                                          |
|-----------------------------------|--------------------------------------------------------------------------|
| <b>Degree Program</b>             | Sales Engineering – Bachelor of Engineering (B.Eng.)                     |
| <b>Module Manager</b>             | Miguel Vázquez, Head of Language Center                                  |
| <b>Modul Type</b>                 | Mandatory Module for international students                              |
| <b>Academic Semester</b>          | 2. Semester                                                              |
| <b>Module Duration</b>            | 1 Semester                                                               |
| <b>Number LV</b>                  | 1                                                                        |
| <b>Offered</b>                    | Winter Semester                                                          |
| <b>Credits</b>                    | 5 CP                                                                     |
| <b>Workload Class</b>             | 60 Hours                                                                 |
| <b>Workload Self-Study</b>        | 90 Hours                                                                 |
| <b>Participation Requirements</b> | Formal: Passing the exam German as a Foreign Language 1<br>Content: none |
| <b>Use in other SG</b>            | Mechatronics Engineering, Mechanical Engineering                         |
| <b>Language</b>                   | English and German                                                       |

---

### **Module Objectives    General**

This course, based on CEFR level A.1.2, is intended for students with no previous knowledge of the German language. Task-based teaching and other classroom activities, including individual group work and compulsory homework, will provide a variety of the basic techniques to use the main vocabulary and grammar of the language. At the end of the course, they will be able to talk about themselves and their areas of study and ask others about personal details, work, hobbies, and interests. The students will be able to use simple sentences and expressions in daily life situations and will be able to interact in a simple way provided the other person talks slowly and is prepared to help (see also CEFR <https://www.coe.int/en/web/common-european-framework-reference-languages/the-cefr-descriptors>). Course material will be provided by the library, the lecturer and the Language Center.

### **Professional Competence**

Students will demonstrate a good level of communication and empathy and will master interactions with other people. They will develop of an awareness of social and cultural conditions enabling them to act appropriately in complex situations- Students are able to apply strategies and methods for the formation and maintenance of networks in this area.

### Interdisciplinary Competence

This course involves the integration of basic cultural, linguistic, geographical, and social studies to enhance learning. Students are introduced to German-speaking countries' customs, holidays, and traditional foods. They compare simple vocabulary and sentence structures between German and English or their native language. Geography lessons include identifying major German-speaking countries and cities on a map. Literature and music exposure involves reading stories and listening to German songs. Technology integration uses language learning apps and watching short German clips with subtitles (e.g. within Speexx). Role-playing helps practice everyday communication like greetings and ordering food. Social studies cover typical daily routines and school systems in Germany. Basic business etiquette includes learning formal greetings and simple business customs. This approach provides a well-rounded, contextual introduction to the German language and culture.

**Course Content**     See description above.

**Literature**             DaF Kompakt neu, Klett Verlag, Script

### Included Courses (LV)

| LV-Nr. | Course Name                    | Lecturer     | Type <sup>21</sup> | SWS | CP |
|--------|--------------------------------|--------------|--------------------|-----|----|
| 87202  | German as a Foreign Language 2 | Behzad Moini | Ü, S               | 4   | 5  |

### Module Examination (Prerequisite for the Award of Credit Points)

| LV-Nr. | Type and Duration of Proof of Performance <sup>22</sup> | Determination of Module Grades | Comments |
|--------|---------------------------------------------------------|--------------------------------|----------|
| 87202  | PLK (90 Minutes)                                        | 100% - not graded              |          |

### Requirements for Admission to the Module Exam

Participation in Practical Training, 70% of attendance

### Further Study-Related Feedback

-

### Comments

Mandatory module for international students at A1.2-level

**Last Update:** 06.03.2025, Miguel Vázquez, Head of Language Center

---

<sup>21</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

<sup>22</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

**Technical English 2**

|                                   |                                                                   |
|-----------------------------------|-------------------------------------------------------------------|
| <b>Degree Program</b>             | Sales Engineering – Bachelor of Engineering (B.Eng.)              |
| <b>Module Manager</b>             | Miguel Vázquez, Head of Language Center                           |
| <b>Modul Type</b>                 | Mandatory Module for German students                              |
| <b>Academic Semester</b>          | 2. Semester                                                       |
| <b>Module Duration</b>            | 1 Semester                                                        |
| <b>Number LV</b>                  | 1                                                                 |
| <b>Offered</b>                    | Winter Semester                                                   |
| <b>Credits</b>                    | 5 CP                                                              |
| <b>Workload Class</b>             | 30 Hours                                                          |
| <b>Workload Self-Study</b>        | 120 Hours                                                         |
| <b>Participation Requirements</b> | Formal: Passing the exam Technical English 1<br><br>Content: none |
| <b>Use in other SG</b>            | Mechatronics Engineering, Mechanical Engineering                  |
| <b>Language</b>                   | English                                                           |

---

**Module Objectives****General**

This course is designed to support the receptive and productive skills of technical language competencies across four skills: speaking, listening, reading and writing at the reference level B2.2 of the Common European Framework of Reference for languages. Students will be better able to understand the main content of technical texts and discussions from different subject areas and to communicate spontaneously in interdisciplinary contexts.

A range of topics will provide the framework for the application of oral and written communicative competency.

Autonomous work outside the class as well as active in-class participation, interaction and feedback will be expected in class. To successfully complete the course, students will need to complete collaborative in-class assignments, submit coursework and give a presentation.

The course consists of two modules.

In Module 2 students will have the opportunity to practice both written and oral communication skills.

Teaching materials related to the students' major fields of study form the framework for the development and application of further, often subject-specific language skills, (that) are required for effective language competence in the technical field.

In addition, more complex technical forms of written and oral communication are analyzed and actively produced.

**Professional Competence**

Professional competence (social skills and ability to work independently): Students must demonstrate a high level of communication and empathy in their professional life.

Therefore, successful interactions with other people are practiced in a task-based training. The development of an awareness of social and cultural conditions with the goal to act appropriately in complex situations constitute another important block in this lecture. Students will learn strategies and methods for the formation and maintenance of networks in this area.

**Interdisciplinary Competence**

In this technical English lecture, "Interdisciplinary Competence" integrates various fields and communication skills. Students learn essential technical vocabulary and grammar,

focusing on terms used in engineering, IT, and science. They develop writing skills by creating simple technical descriptions and reports. Reading comprehension is enhanced through simplified technical articles and manuals. Listening skills are improved with short technical lectures and videos, emphasizing note-taking. Presentation skills are built through short technical presentations using visual aids. Practical communication is practiced via role-playing technical scenarios. Collaborative projects apply technical English in group settings. Real-world case studies are discussed to identify key issues and solutions. Cultural competence is developed by understanding international technical communication styles.

**Course Content** See description above.

**Literature** Script, text editing, reading comprehension, vocabulary and grammar, research tasks, and discussions. It includes analyzing texts like "The Real Jetsons - Personal Flight" (Inch - Technical English Inch by Inch, 13, 2/2017) and reading "A History of Electric Cars" by Nigel Burton (208 pages, The Crowood Press). Students will also engage in presentation preparation and delivery.

#### Included Courses (LV)

| LV-Nr. | Course Name         | Lecturer    | Type <sup>23</sup> | SWS | CP |
|--------|---------------------|-------------|--------------------|-----|----|
| 87203  | Technical English 2 | Doris Düwel | Ü, S               | 2   | 5  |

#### Module Examination (Prerequisite for the Award of Credit Points)

| LV-Nr. | Type and Duration of Proof of Performance <sup>24</sup> | Determination of Module Grades | Comments            |
|--------|---------------------------------------------------------|--------------------------------|---------------------|
| 87203  | PLK (60 Minutes)                                        | 50%, not graded                |                     |
| 87203  | PLP                                                     | 50%, not graded                | During the semester |

#### Requirements for Admission to the Module Exam

Participation in Practical Training, 70% of attendance

#### Further Study-Related Feedback

-

#### Comments

Mandatory Module for German students at B2.2-level

**Last Update:** 06.03.2025, Miguel Vázquez, Head of Language Center

<sup>23</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

<sup>24</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

**Module Number: 63004**  
**Finance and Controlling**

**SPO-Version: 34**

|                                   |                                                           |
|-----------------------------------|-----------------------------------------------------------|
| <b>Degree Program</b>             | Sales Engineering – Bachelor of Engineering (B.Eng.)      |
| <b>Module Manager</b>             | Prof. Dr. Marc Falko Schrader                             |
| <b>Modul Type</b>                 | Mandatory Module within the study focus Sales Engineering |
| <b>Academic Semester</b>          | 2. Semester                                               |
| <b>Module Duration</b>            | 1 Semester                                                |
| <b>Number LV</b>                  | 1                                                         |
| <b>Offered</b>                    | Winter Semester                                           |
| <b>Credits</b>                    | 5 CP                                                      |
| <b>Workload Class</b>             | 60 Hours                                                  |
| <b>Workload Self-Study</b>        | 90 Hours                                                  |
| <b>Participation Requirements</b> | none                                                      |
| <b>Use in other SG</b>            | none                                                      |
| <b>Language</b>                   | English                                                   |

---

**Module  
Objectives**

**Professional Competence**

Students are able to explain financing and investment concepts and demonstrate their strategic relevance in both national and international contexts. They will be able to describe different types of financing, assess investment decisions, and analyze the implications of various risk factors. Students will also be equipped to analyze the impact of sustainability and ethical considerations on financial decisions.

**Interdisciplinary Competence**

Students are able to evaluate financing and investment decisions through an interdisciplinary lens, integrating business strategy, economics, and global market dynamics. They can assess how financial decisions are influenced by political, economic, and cultural factors across international markets.

**Course Content** **Introduction to Financing and Investment**

Basic concepts of financing (equity, debt, return on investment, risk) and their role in business success. Discussion of international differences in financing practices.

**Financing Types and International Aspects**

Overview of financing options: equity vs. debt, private equity, venture capital, crowdfunding, and their application in different global markets.

**Strategic Investment Decisions**

Factors influencing strategic investment decisions, with a focus on different business models (e.g., tech start-ups vs. traditional industries) and international market considerations.

**Risk Management and Uncertainty in Financing**

Identification and management of financial risks, including market, political, and exchange rate risks. Crisis management and adaptive financial strategies in uncertain environments.

**Sustainability and Ethical Financial Decisions**

The role of ESG (Environmental, Social, Governance) criteria in investment and financing decisions. Sustainable investments and the ethical responsibilities of businesses in the financial sector.

**Future of Financing and Investment**

Exploration of future trends in the finance sector, including the impact of digital transformation and emerging market opportunities in new technologies.

**Literature**      Latest edition: Eun, Resnick, Chuluun, International Finance Management (most recent edition)

**Included Courses (LV)**

| LV-Nr. | Course Name             | Professor         | Type <sup>25</sup> | SWS | CP |
|--------|-------------------------|-------------------|--------------------|-----|----|
| 63104  | Finance and Controlling | external lecturer | V                  | 4   | 5  |

**Module Examination** (Prerequisite for the Award of Credit Points)

| LV-Nr. | Type and Duration of Proof of Performance <sup>26</sup> | Determination of Module Grades | Comments |
|--------|---------------------------------------------------------|--------------------------------|----------|
| 63104  | PLK (60 Minutes)                                        | 100%                           |          |

**Requirements for Admission to the Module Exam**

none

**Further Study-Related Feedback**

none

**Comments**

none

**Last Update:** 15.09.2025, Prof. Dr. Marc Falko Schrader

---

<sup>25</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

<sup>26</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

**Module Number: 63005**  
**Business Administration**

**SPO-Version: 34**

|                                   |                                                           |
|-----------------------------------|-----------------------------------------------------------|
| <b>Degree Program</b>             | Sales Engineering – Bachelor of Engineering (B.Eng.)      |
| <b>Module Manager</b>             | Prof. Dr. Marc Falko Schrader                             |
| <b>Modul Type</b>                 | Mandatory Module within the study focus Sales Engineering |
| <b>Academic Semester</b>          | 2. Semester                                               |
| <b>Module Duration</b>            | 1 Semester                                                |
| <b>Number LV</b>                  | 1                                                         |
| <b>Offered</b>                    | Winter Semester                                           |
| <b>Credits</b>                    | 5 CP                                                      |
| <b>Workload Class</b>             | 60 Hours                                                  |
| <b>Workload Self-Study</b>        | 90 Hours                                                  |
| <b>Participation Requirements</b> | none                                                      |
| <b>Use in other SG</b>            | none                                                      |
| <b>Language</b>                   | English                                                   |

---

**Module  
Objectives**

**Professional Competence**

Students will be able to apply business management and market- and customer-oriented ways of thinking based on current challenges. Students can explain the theoretical and practical fundamentals of customer-led business administration and explain, apply, and discuss them using concrete examples, e.g., current business news.  
Students are able to identify and analyze business management and market-oriented issues. They are able to develop solutions, reflect on them critically, and discuss them. In addition, they can independently analyze, evaluate, and interpret practical examples using these methods.

**Interdisciplinary Competence**

Students can work on tasks independently and develop solutions both independently and in a team.

- Course Content** **Introduction to key concepts in customer-led business administration** (market, competition, value creation, consumer behavior).
- Explanation of market mechanisms and their significance for corporate decisions.
- Purchasing decisions and equity theory**
- Examination of factors influencing purchasing decisions.
  - Introduction to equity theory: how perceptions of fairness influence consumer behavior.
  - Other models for explaining purchasing decisions.
- B2B business relationships**
- Special features of B2B transactions and long-term cooperation.
  - Establishing and maintaining supplier and partner networks.
  - Differences between B2B and B2C markets.
- External accounting: Accounting and reporting**
- Fundamentals of accounting and preparing annual financial statements.
  - Importance of external accounting for communication with external stakeholders.
- Internal accounting: Cost and performance accounting**
- Methods of cost and performance accounting for corporate management.
  - Topics: Cost calculation, break-even analysis, and budgeting.
- Location decisions and location factors**
- Analysis of factors in location selection (labor costs, infrastructure, market potential).
- Customer segmentation and brand management**
- Methods of customer segmentation according to socio-demographics, purchasing behavior, and needs.
- Importance of Pricing decisions**

**Literature** Latest edition: H. Schmalen/H. Pechtl, Fundamentals and Problems of Business Administration, Schäffer-Poeschel, 2019 Homburg, Fundamentals of Marketing Management, Gabler/Kotler, Fundamentals of Marketing, Pearson

#### Included Courses (LV)

| LV-Nr. | Course Name             | Professor          | Type <sup>27</sup> | SWS | CP |
|--------|-------------------------|--------------------|--------------------|-----|----|
| 63105  | Business Administration | Prof. Dr. Schrader | V, S               | 4   | 5  |

#### Module Examination (Prerequisite for the Award of Credit Points)

| LV-Nr. | Type and Duration of Proof of Performance <sup>28</sup> | Determination of Module Grades | Comments |
|--------|---------------------------------------------------------|--------------------------------|----------|
| 63105  | PLK (60 Minutes)                                        | 100%                           |          |

**Requirements for Admission to the Module Exam**  
none

<sup>27</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

<sup>28</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

**Further Study-Related Feedback**

none

**Comments**

none

**Last Update:** 17.09.2025, Prof. Dr. Marc Falko Schrader

## Module Number: 88006

### Statistics

SPO-Version: 34

|                            |                                                      |
|----------------------------|------------------------------------------------------|
| Degree Program             | Sales Engineering – Bachelor of Engineering (B.Eng.) |
| Module Manager             | Prof. Dr. Axel Löffler                               |
| Modul Type                 | Mandatory Module                                     |
| Academic Semester          | 3. Semester                                          |
| Module Duration            | 1 Semester                                           |
| Number LV                  | 1                                                    |
| Offered                    | Summer Semester                                      |
| Credits                    | 5 CP                                                 |
| Workload Class             | 60 Hours                                             |
| Workload Self-Study        | 90 Hours                                             |
| Participation Requirements | Formal: none<br>Content: none                        |
| Use in other SG            | Mechanical Engineering                               |
| Language                   | English                                              |

---

#### Module Objectives

#### Professional Competence

##### ***Know That***

The students are able to correctly **apply** the **technical vocabulary** in a given statistical context.

In addition, they are able to **quote** the **definitions** of the technical terms.

##### ***Know Why***

The students are able to **provide examples** concerning the **definitions** of technical terms and the application of specific **methods**. Moreover, they are able to **explain why** the application of a specific method to a given problem is **effective**.

##### ***Know How***

The students are able to **analyse** given problems, to **select** and **apply appropriate methods** to solve the given problems, thereby **adapting** the standard solution processes to problem specific needs.

#### Interdisciplinary Competence

The students are able to **self-organize their learning process**, including weekly **repetition of** and **reflection on** the course material, doing **additional exercises**, deepening their knowledge by **literature study** and **preparing questions** to the lecturer. Ideally, this takes place **in teamwork** with their co-students.

## Course Content *Descriptive Statistics*

Definitions of technical terms: population, subpopulation, **sample**, **variable**, **categorical** and **metric** scale levels.

Description of a given, **univariate data set** by means of **key figures** (e.g. mean, median, quantiles, range, standard deviation, inter quartile range, skewness and kurtosis, etc.), **tables** and **graphical visualisations** (e.g. bar-/pie-diagram, histogram, etc.) depending on the variable's scale level.

**Bivariate statistics** for categorical (contingency figures) and metric variables (correlation figures).

## *Probability Theory*

Definitions of technical terms: **random experiment** and **probability**.

**Basic principles** (Kolmogorov's axioms), implications of the basic principles, visualisation by Venn diagrams, **conditional probabilities**, Bayes' theorem, theorem of total probability, properties of expected value and variance, **central limit theorem**, (discrete) **probability distributions** and (continuous) **probability density functions**.

## *Inductive Statistics* (Inferential Statistics)

Definitions of technical terms: **confidence intervals** and **hypothesis testing**.

**Basic inference tests**: binomial test, chi2-test(s), t-test(s), analysis of variance, Levene-test.

## Literature

L.E. Mee F.M. Dekking, C. Kraaikamp, H.P. Lopuhaä: A Modern Introduction to Probability and Statistics: Understanding Why and How, Springer Texts in Statistics, 2007

D. Spiegelhalter: The Art of Statistics: Learning from Data, Pelican Books, 2020

C. Wheelan: Naked Statistics: Stripping the Dread from the Data, Norton & Company, 2014

## Included Courses (LV)

| LV-Nr. | Course Name | Professor              | Type <sup>29</sup> | SWS | CP |
|--------|-------------|------------------------|--------------------|-----|----|
| 88301  | Statistics  | Prof. Dr. Axel Löffler | V, Ü               | 4   | 5  |

## Module Examination (Prerequisite for the Award of Credit Points)

| LV-Nr. | Type and Duration of Proof of Performance <sup>30</sup> | Determination of Module Grades | Comments                                                                        |
|--------|---------------------------------------------------------|--------------------------------|---------------------------------------------------------------------------------|
| 88301  | PLK – written exam (90 minutes)                         | 100%                           | <b>40</b> of 90 points: passed (4.0)<br><b>80</b> of 90 points: excellent (1.0) |

<sup>29</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

<sup>30</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

### **Requirements for Admission to the Module Exam**

The students have to be **present at 75%** of the given courses up to the last date of signing off for the exam.

In addition, they have to **complete** the following **5 MatlabAcademy** self-paced **online courses**:

Matlab Onramp, Statistics Onramp, Optimization Onramp, Introduction to Symbolic Math (with Matlab), Introduction to Linear Algebra (with Matlab).

### **Further Study-Related Feedback**

**Feedback** on questions and answers both from the students and the lecturer.

### **Comments**

The exam takes place as an **online-written exam** using the **DigiExam** and **MatlabGrader**. The exam is **graded automatically**. The students may **run** their scripts **as often as they like** and **submit** them **5 times**.

Points are only awarded for correct assignments of variables. In particular, no points are awarded if there are any syntactical errors in the script.

**Last Update:** 24.06.2024, Prof. Dr. Axel Löffler

## Module Number: 88008

### Machine Elements 1

SPO-Version: 34

|                                   |                                                      |
|-----------------------------------|------------------------------------------------------|
| <b>Degree Program</b>             | Sales Engineering – Bachelor of Engineering (B.Eng.) |
| <b>Module Manager</b>             | Prof. Dr. Alexander Kremer                           |
| <b>Modul Type</b>                 | Mandatory Module                                     |
| <b>Academic Semester</b>          | 3. Semester                                          |
| <b>Module Duration</b>            | 1 Semester                                           |
| <b>Number LV</b>                  | 1                                                    |
| <b>Offered</b>                    | Summer Semester                                      |
| <b>Credits</b>                    | 5 CP                                                 |
| <b>Workload Class</b>             | 90 Hours                                             |
| <b>Workload Self-Study</b>        | 60 Hours                                             |
| <b>Participation Requirements</b> | none                                                 |
| <b>Use in other SG</b>            | Mechanical Engineering                               |
| <b>Language</b>                   | English                                              |

---

#### Module Objectives

##### Professional Competence

In this course, learn how to communicate effectively by means of reading, understanding and drawing technical communication documents such as s. to represent components and assemblies with all the necessary details for production and assembly. They are able to apply the rules of technical drawing and create technical drawings independently. Furthermore, you will be able to design and depict sections, penetrations and represent them.

Furthermore, students will acquire basic knowledge about the calculation and design of machine elements and their integration into machines.

A further focus is on understanding the operating principles and areas of application of machine elements. Students will learn how to select individual machine elements according to customer requirements (specifications vs. functional specifications) and how to combine them sensibly to create a functional technical product.

In addition, methods and procedures for the design, construction and evaluation of technical products with regard to their service life and reliability are taught. Essential skills and ways of thinking that characterize the language of the engineer, such as the creation of sketches, technical drawings and the use of computer-aided programs (e.g., NX, Creo, KiSSsoft), are also promoted.

##### Interdisciplinary Competence

In addition, the course aims to develop your systematic, analytical and abstract thinking, promote your creativity and sharpen your technical and business judgment. In this way, you will be optimally prepared for the challenges of engineering practice.

Students will also develop their generic skills, particularly in the areas of interpersonal skills and independence. They will develop an awareness of the effects of failed machine elements, which will strengthen their sense of responsibility in terms of product liability and social responsibility.

**Course Content** The following topics are covered in the “Machine Elements A” module:

- Technical Drawing
- Fundamentals of Technical System Design
- Strength-based Design
- Fundamentals of Design for Connection Technology Elements: Adhesive Joints, Soldered Joints, Welded Joints, Riveted Joints.
- Bolted Joints
- Springs
- Bolts, Pins and Retaining Elements

## Literature

Lecture notes

Mott, R. L.: Machine Elements in Mechanical Design, Pearson, ISBN: 978-0-13-507793-1, 2013.

Schmid, S. R.; Hamrock, B. J.; Jacobson, H. B. O.: Fundamentals of Machine Elements, CRC Press, Taylor & Francis Group, ISBN: 978-0-42-9171291, 2013.

Wie, J.: Analysis and Design of Machine Elements, John Wiley & Sons, 2019.

Childs, P. R. N.: Mechanical Design Engineering Handbook, Elsevier Ltd., ISBN: 978-0-08-097759-1, 2014.

Narayana, K. L.; Kannaiah, P.; Venkata Reddy, K.: Machine Drawing, New Age international Publisher, ISBN: 978-81-224-2518-5, 2006.

Norton, L. R.: Machine Design, Pearson, 2011.

Collins, J. A.; Busby, H.; Staab, G.: Mechanical Design of Machine Elements and Machines, John Wiley & Sons, ISBN: 978-0-470-41303-6, 2010.

Juvinall, R. C.; Marshek, K. M.: Fundamentals of Machine Component Design, John Wiley & Sons, ISBN-13: 9781118012895, 2012.

Giesecke, F. E.; Mitchell, A.; Spencer, H. C.; Hill, I. L.; Dygdon, J, T.: Technical Drawing, Pearson Education (US); ISSN: 978-0-13-461971-2, 1999.

Madsen, D.: Engineering Drawing and Design, Delmar Cengage Learning, ISBN: 978-1-305-65972-8, 2016.

Fritz; Hoischen: Technisches Zeichnen, Cornelsen, ISBN: 978-3-06-452487-3, 2024.

## Included Courses (LV)

| LV-Nr. | Course Name                      | Professor                  | Type <sup>31</sup> | SWS | CP |
|--------|----------------------------------|----------------------------|--------------------|-----|----|
| 88303  | Introduction to Machine Elements | Prof. Dr. Alexander Kremer | V, L, Ü            | 5   | 5  |
| 88307  | Technical Drawing                | Prof. Dr. Alexander Kremer | V, Ü               | 1   |    |

## Module Examination (Prerequisite for the Award of Credit Points)

| LV-Nr. | Type and Duration of Proof of Performance <sup>32</sup> | Determination of Module Grades | Comments                           |
|--------|---------------------------------------------------------|--------------------------------|------------------------------------|
| 88303  | PLK (120 Minutes)                                       | 100%                           | Joint examination for both courses |
| 88303  | PLL                                                     | Not graded                     | During the semester                |

<sup>31</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

<sup>32</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

**Requirements for Admission to the Module Exam**

- Successful Completion of Assignments
- Successful Participation in Laboratory

**Further Study-Related Feedback**

none

**Comments**

none

**Last Update:** 03.12.2024, Prof. Dr. Alexander Kremer

**3D-CAX**

|                                   |                                                      |
|-----------------------------------|------------------------------------------------------|
| <b>Degree Program</b>             | Sales Engineering – Bachelor of Engineering (B.Eng.) |
| <b>Module Manager</b>             | Prof. Dr. Markus Merkel                              |
| <b>Modul Type</b>                 | Mandatory Module                                     |
| <b>Academic Semester</b>          | 3. Semester                                          |
| <b>Module Duration</b>            | 1 Semester                                           |
| <b>Number LV</b>                  | 2                                                    |
| <b>Offered</b>                    | Summer Semester                                      |
| <b>Credits</b>                    | 5 CP                                                 |
| <b>Workload Class</b>             | 60 Hours                                             |
| <b>Workload Self-Study</b>        | 90 Hours                                             |
| <b>Participation Requirements</b> | none                                                 |
| <b>Use in other SG</b>            | Mechatronics Engineering, Mechanical Engineering     |
| <b>Language</b>                   | English                                              |

---

**Module Objective Professional Competence:**

The students are able to define 3D geometry guided by the idea of the digital product development process. They will be able to use a 3D-CAD system for engineering applications. They are proficient in designing individual components and assemblies. The students can extract technical drawings out of 3D-CAD systems.

They are capable of describing the individual steps in the development process systematically and methodically (e.g., CAD-CAE, CAD-CAM, CAD-MKS, CAD-VR, CAD-RE process chain). Additionally, students will be able to discuss and evaluate complex organizational relationships within the context of virtual product development.

**Interdisciplinary Competence ("social competence" and "independence"):**

The students develop social competencies independently, as a part of a team and are able to apply their acquired technical knowledge in an interdisciplinary context.

- Course Content**
- Fundamentals of computer-aided product development
  - Surface modeling, volume description;
  - Lifecycle engineering, virtual engineering, collaborative engineering
  - Virtual reality, Digital twin
  - Digital Mock Up
  - Simulation in the CAD environment
  - Model-based definition with ISO-GPS
  - Generative Design, Knowledge-based engineering
  - CAD/CAM software and hardware
  - PDM/PLM systems
  - Coupling CAD/CAE
  - Reverse engineering

3D-CAD designing: Building 3D geometry by 3D-CAD solid modeler, transferring individual components into assemblies, Extracting Drawings, production documents, Surface modeling

**Literature** Coticchia, M. E., Crawford, G. W., Preston, E. J. (1993). CAD/CAM/CAE Systems: Justification, Implementation, Productivity Measurement, Second Edition, Hongkong: Taylor & Francis.  
 Advances in CAD/CAM/CAE Technologies. (2020). Schweiz: MDPI AG.  
 Sendler, U. (2013). CAD & Office Integration: OLE for Design and Modeling. A New Technology for CA Software. Deutschland: Springer Berlin Heidelberg.

**Included Courses (LV)**

| LV-Nr. | Course Name | Professor               | Type <sup>33</sup> | SWS | CP |
|--------|-------------|-------------------------|--------------------|-----|----|
| 88102  | CAD/CAE/CAM | Prof. Dr. Markus Merkel | V                  | 2   | 5  |
| 88103  | 3D-CAD      | Prof. Dr. Markus Merkel | L, Ü               | 2   |    |

**Module Examination (Prerequisite for the Award of Credit Points)**

| LV-Nr. | Type and Duration of Proof of Performance <sup>34</sup> | Determination of Module Grades | Comments            |
|--------|---------------------------------------------------------|--------------------------------|---------------------|
| 88102  | PLK 60 Minutes                                          | 50%                            |                     |
| 88103  | PLL 60 Minutes                                          | 50%                            | During the semester |

**Requirements for Admission to the Module Exam**  
 none

**Further Study-Related Feedback**

**Comments**  
 none

**Last Update:** 06.03.2025, Prof. Dr. Markus Merkel

<sup>33</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

<sup>34</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

**Module Number: 88010**

**SPO-Version: 34**

## **Manufacturing and Production Systems**

|                                   |                                                      |
|-----------------------------------|------------------------------------------------------|
| <b>Degree Program</b>             | Sales Engineering – Bachelor of Engineering (B.Eng.) |
| <b>Module Manager</b>             | Prof. Dr. Tilman Traub                               |
| <b>Modul Type</b>                 | Mandatory Module                                     |
| <b>Academic Semester</b>          | 3. Semester                                          |
| <b>Module Duration</b>            | 1 Semester                                           |
| <b>Number LV</b>                  | 2                                                    |
| <b>Offered</b>                    | Summer Semester                                      |
| <b>Credits</b>                    | 5 CP                                                 |
| <b>Workload Class</b>             | 75 Hours                                             |
| <b>Workload Self-Study</b>        | 75 Hours                                             |
| <b>Participation Requirements</b> | none                                                 |
| <b>Use in other SG</b>            | Mechanical Engineering                               |
| <b>Language</b>                   | English                                              |

---

### **Module Objectives**

#### **Professional Competence**

Students are able to name the most important manufacturing processes and the required tools and their possible applications. Students are able to assess the application limits and weigh up the advantages and disadvantages of the processes. They are able to select suitable processes for a specific component. They can transfer, execute, calculate, compare and evaluate the underlying structures of the subject area.

#### **Interdisciplinary Competence**

Students will apply the methods and knowledge they have learned in the course to current issues in small teams. As a result, they acquire the competence to engage in argumentative debate and are thus able to act independently.

- Course Content**
- Introduction to production technology
  - The basic production techniques
    - Forming
    - Shaping
    - Cutting
    - Joining
    - Coating
    - Changing material properties
  - Basic machine design

### **Literature**

Course script

Additional references for further studies:

Fritz Klocke (Ed.): Manufacturing Processes (several issues), Springer, 2009-11

Michel Baudin, Torbjorn Netland: Introduction to Manufacturing. Routledge, 2023

**Included Courses (LV)**

| LV-Nr. | Course Name                                | Professor              | Type <sup>35</sup> | SWS | CP |
|--------|--------------------------------------------|------------------------|--------------------|-----|----|
| 88305  | Manufacturing and Production Systems       | Prof. Dr. Tilman Traub | V                  | 4   | 5  |
| 88306  | Manufacturing and Production Systems – Lab | Prof. Dr. Tilman Traub | L                  | 1   |    |

**Module Examination** (Prerequisite for the Award of Credit Points)

| LV-Nr. | Type and Duration of Proof of Performance <sup>36</sup> | Determination of Module Grades | Comments |
|--------|---------------------------------------------------------|--------------------------------|----------|
| 88305  | PLK (60 Minutes)                                        | 100%                           |          |

**Requirements for Admission to the Module Exam**

Successful participation of production systems – lab.

**Further Study-Related Feedback**

--

**Comments**

none

**Last Update:** 18.06.2024, Prof. Dr. Tilman Traub

---

<sup>35</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

<sup>36</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

**Module Number: 63006**  
**B2B Marketing**

**SPO-Version: 34**

|                                   |                                                           |
|-----------------------------------|-----------------------------------------------------------|
| <b>Degree Program</b>             | Sales Engineering – Bachelor of Engineering (B.Eng.)      |
| <b>Module Manager</b>             | Prof. Dr. Arndt Borgmeier                                 |
| <b>Modul Type</b>                 | Mandatory Module within the study focus Sales Engineering |
| <b>Academic Semester</b>          | 3. Semester                                               |
| <b>Module Duration</b>            | 1 Semester                                                |
| <b>Number LV</b>                  | 1                                                         |
| <b>Offered</b>                    | Winter Semester, Summer Semester                          |
| <b>Credits</b>                    | 5 CP                                                      |
| <b>Workload Class</b>             | 60 Hours                                                  |
| <b>Workload Self-Study</b>        | 90 Hours                                                  |
| <b>Participation Requirements</b> | Basics in Business Management                             |
| <b>Use in other SG</b>            |                                                           |
| <b>Language</b>                   | English                                                   |

---

**Module Objectives**

**Professional competence**

The students are able to critically discuss the importance of services and customer relationships in a holistic, competition-specific and customer-oriented manner. They are able to compare complex services and value creation networks of modern technology companies and design them in a value-oriented manner.

They are able to think, analyze, classify facts and make well-founded decisions in a market-oriented manner and in the network for organizational value creation. They are able to present, critically analyze and optimize customer-related systems, business processes and interactions in a relationship- and interface-specific manner. They will be able to discuss and apply marketing terms, contexts and models with technical confidence. They are able to use marketing strategies and marketing instruments for B2B marketing and to analyze and interpret practical examples with this methodological background: After critical reflection and discussion, they can independently adapt and further develop design recommendations, solutions and concepts in the field of marketing management for industrial, information and service goods in organizational value creation.

**Interdisciplinary competence**

Participants are able to discuss case studies in teams and develop solutions together. They make their own independent contributions to groups in order to solve exercises. Moreover, they take responsibility for the group, communicate with each other in a solution-oriented manner and support each other.

They are able to research information, evaluate the quality of sources found, use suitable material and discuss it professionally. They use English and become aware of the importance of the English language in a marketing context.

**Course Content** Concept of marketing management: development stages of marketing, customer relationship and customer loyalty.  
Markets and market mechanisms: market mechanism, elasticities, case studies. Business models and business model innovation, value proposition design Generic market strategies.  
Comparative competitive advantage (CCA) and unique selling proposition (USP); value creation concept, value chain, five forces model (according to Porter) and examples; Strategic business fields/ business units (SGF)/ (SBU) Basic marketing strategies (basic strategies), their elements and examples.  
Strategic marketing and selected analytical tools: e.g. SWOT analysis; experience curve; product life cycle; adoption behavior/ market diffusion; portfolio analysis methodology; Industrial goods in the organizational procurement context: industrial goods and industrial goods markets; services and service markets; purchasing situations; buying center/decision making unit;  
Marketing-relevant characteristics of the "hidden champions";  
Fundamentals of industrial service marketing, business type-specific marketing and significance and individual aspects in: Product, Supplier, System and Plant/ Project business;  
Interface between marketing and sales

**Literature** Hutt, Michael D.; Speh, Thomas W.; Hoffman, Douglas: Business Marketing Management: B2B, 2023.  
Silver, Jeffrey; Mar-Tang, Jason; Huckaby, Michael: Mastering the Art of Sales Engineering: Develop essential skills and gain valuable insights for high-tech sales engineering success, 2024.  
Purle, Enrico; Arica, Mahmut; Korte, Sabine; Hummels, Henning: B2B-Marketing und Vertrieb: Strategie - Instrumente - Umsetzung, Berlin, 2025.  
Eckardt, Gordon: B2B Marketing, Stuttgart, 2010.  
Kleinaltenkamp, Michael; Saab, Samy: Technischer Vertrieb: Eine praxisorientierte Einführung in das Business-to-Business, Berlin, 2021.

Case studies, technical articles, internet information, role plays, lecture notes and current company information where applicable.

#### Included Courses (LV)

| LV-Nr. | Course Name   | Professor                 | Type <sup>37</sup> | SWS | CP |
|--------|---------------|---------------------------|--------------------|-----|----|
| 63106  | B2B Marketing | Prof. Dr. Arndt Borgmeier | V                  | 4   | 5  |

#### Module Examination (Prerequisite for the Award of Credit Points)

| LV-Nr. | Type and Duration of Proof of Performance <sup>38</sup> | Determination of Module Grades | Comments |
|--------|---------------------------------------------------------|--------------------------------|----------|
| 63106  | PLK (60 Minutes)                                        | 100%                           |          |

#### Requirements for Admission to the Module Exam

none

<sup>37</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

<sup>38</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

**Further Study-Related Feedback**

*Case Study and feedback on exercises in class, establish a class "Learning Mindmap" as visual.*

**Comments**

none

**Last Update:** 12.09.2025, Prof. Dr. Prof. Dr. Arndt Borgmeier

**Module Number: 63007**

**SPO-Version: 34**

## **Management, Governance and Planning**

|                                   |                                                           |
|-----------------------------------|-----------------------------------------------------------|
| <b>Degree Program</b>             | Sales Engineering – Bachelor of Engineering (B.Eng.)      |
| <b>Module Manager</b>             | Prof. Dr. Marc Falko Schrader                             |
| <b>Modul Type</b>                 | Mandatory Module within the study focus Sales Engineering |
| <b>Academic Semester</b>          | 3. Semester                                               |
| <b>Module Duration</b>            | 1 Semester                                                |
| <b>Number LV</b>                  | 1                                                         |
| <b>Offered</b>                    | Summer Semester                                           |
| <b>Credits</b>                    | 5 CP                                                      |
| <b>Workload Class</b>             | 60 Hours                                                  |
| <b>Workload Self-Study</b>        | 90 Hours                                                  |
| <b>Participation Requirements</b> | none                                                      |
| <b>Use in other SG</b>            | none                                                      |
| <b>Language</b>                   | English                                                   |

---

### **Module Objectives**

#### **Professional skills**

Students are able to apply strategic, market- and customer-oriented thinking as well as modern strategic planning methods. Students can explain, apply, and discuss conceptual management principles using practical examples.

Students can work on and develop management-oriented topics and solutions, critically reflect on them, and discuss them. Students are able to identify and analyze strategy and management challenges in depth. They are able to recognize fundamental connections and models in the field of management and critically reflect on them. In addition, students are able to independently analyze, evaluate, and interpret practical examples using these methodological principles.

#### **Interdisciplinary skills**

Students can work on and solve problems in groups, discuss results, and coordinate with other groups. They can present and discuss their findings in teams and in front of other groups.

**Course Content Management as a function and institution**

Fundamental tasks and responsibilities of managers.

Most important management functions (planning, organization, leadership, control) and analyzing their application.

Difference between management as a function (processes and tasks) and management as an institution (organizations and management levels).

Requirements for managers in different corporate contexts, e.g., in international and interdisciplinary teams.

**Corporate governance**

Importance and principles of corporate governance, especially in relation to the relationship between corporate management, supervisory bodies, and stakeholders.

Corporate Governance codex in Germany

The role of corporate management in ensuring transparency, accountability, and ethical behavior in companies.

Best practices in corporate governance and their application in different corporate cultures.

**Strategic planning and decision-making**

Understand the basic processes of strategic planning: analysis of the initial situation, setting goals, and developing strategies.

Be familiar with relevant instruments and methods of strategic analysis (e.g., SWOT analysis, PESTEL, Porter's Five Forces).

**Literature**

Robbins, Coulter, Management, Global Edition, Pearson, latest edition

G. Schreyögg/J. Koch, Management: Grundlagen der Unternehmensführung, latest edition

Articles from Harvard Business Review, MIT Sloan Review and The Economist

**Included Courses (LV)**

| LV-Nr. | Course Name                         | Professor          | Type <sup>39</sup> | SWS | CP |
|--------|-------------------------------------|--------------------|--------------------|-----|----|
| 63107  | Management, Governance and Planning | Prof. Dr. Schrader | V, S               | 4   | 5  |

**Module Examination (Prerequisite for the Award of Credit Points)**

| LV-Nr. | Type and Duration of Proof of Performance <sup>40</sup> | Determination of Module Grades | Comments            |
|--------|---------------------------------------------------------|--------------------------------|---------------------|
| 63107  | PLK 60<br>PLR                                           | 2/3 PLK and<br>1/3 PLR         | During the semester |

**Requirements for Admission to the Module Exam**

Successful passed PLR of the module 63107

**Further Study-Related Feedback**

none

**Comments**

none

**Last Update:** 15.09.2025, Prof. Dr. Marc Falko Schrader

<sup>39</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

<sup>40</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

**Module Number: 63008**  
**Scientific Work / Project**

**SPO-Version: 34**

|                                   |                                                           |
|-----------------------------------|-----------------------------------------------------------|
| <b>Degree Program</b>             | Sales Engineering – Bachelor of Engineering (B.Eng.)      |
| <b>Module Manager</b>             | Prof. Dr. Christian Uhl                                   |
| <b>Modul Type</b>                 | Mandatory Module within the study focus Sales Engineering |
| <b>Academic Semester</b>          | 4. Semester                                               |
| <b>Module Duration</b>            | 1 Semester                                                |
| <b>Number LV</b>                  | 1                                                         |
| <b>Offered</b>                    | Winter Semester                                           |
| <b>Credits</b>                    | 5 CP                                                      |
| <b>Workload Class</b>             | 60 Hours                                                  |
| <b>Workload Self-Study</b>        | 90 Hours                                                  |
| <b>Participation Requirements</b> | none                                                      |
| <b>Use in other SG</b>            | none                                                      |
| <b>Language</b>                   | English                                                   |

---

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Objectives</b> | <p><b>General</b><br/>The student research paper represents the first independent technical-scientific work and thus serves as preparation for the bachelor's thesis.</p> <p><b>Professional Competence</b><br/>Students are able to independently research a technical-scientific question and present it in report form. They are able to research and scientifically cite relevant literature, structure subject areas, and analyze and discuss technical aspects in writing. They can describe the methods used, elaborate on the results, and present them in a lecture format. The level of specialized study depends on the chosen topic.</p> <p><b>Interdisciplinary Competence</b><br/>Students are able to independently familiarize themselves with new subject areas. They are able to present and communicate complex results clearly and comprehensibly in the form of a technical-scientific report, if necessary also in the form of a presentation.</p> |
| <b>Course Content</b>    | <ul style="list-style-type: none"><li>- Methods of academic work</li><li>- Methods of academic research</li><li>- Writing academic texts</li><li>- Academic citation</li><li>- Creating academic presentations</li><li>- Independently addressing an academic question</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Literature</b>        | Lecture script or topic-specific for the student work Sales with easy-to-understand checklists.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

**Included Courses (LV)**

| LV-Nr. | Course Name                     | Professor     | Type <sup>41</sup> | SWS | CP |
|--------|---------------------------------|---------------|--------------------|-----|----|
| 63108  | Introduction to Scientific Work | Prof. Dr. Uhl | S                  | 1   | 5  |
| 63109  | Student Research Project        |               | P                  | 3   |    |

**Module Examination (Prerequisite for the Award of Credit Points)**

| LV-Nr. | Type and Duration of Proof of Performance <sup>42</sup> | Determination of Module Grades | Comments            |
|--------|---------------------------------------------------------|--------------------------------|---------------------|
| 63108  | Mandatory participation before the examination 63109    |                                |                     |
| 63109  | PLP                                                     | 100%                           | During the semester |

**Requirements for Admission to the Module Exam**

*Participation on seminar 63108*

**Further Study-Related Feedback**

none

**Comments**

none

**Last Update:** 06.08.2025, Prof. Dr. Uhl

---

<sup>41</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

<sup>42</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

## Module Number: 88023

### Machine Elements 2

SPO-Version: 34

|                                   |                                                      |
|-----------------------------------|------------------------------------------------------|
| <b>Degree Program</b>             | Sales Engineering – Bachelor of Engineering (B.Eng.) |
| <b>Module Manager</b>             | Prof. Dr. Alexander Kremer                           |
| <b>Modul Type</b>                 | Mandatory Module                                     |
| <b>Academic Semester</b>          | 4. Semester                                          |
| <b>Module Duration</b>            | 1 Semester                                           |
| <b>Number LV</b>                  | 1                                                    |
| <b>Offered</b>                    | Winter Semester                                      |
| <b>Credits</b>                    | 5 CP                                                 |
| <b>Workload Class</b>             | 90 Hours                                             |
| <b>Workload Self-Study</b>        | 60 Hours                                             |
| <b>Participation Requirements</b> | none                                                 |
| <b>Use in other SG</b>            | Mechanical Engineering                               |
| <b>Language</b>                   | English                                              |

---

#### Module Objectives    **Professional Competence**

In this course, students will acquire basic knowledge about the calculation and design of machine elements and their integration into machines.

A further focus is on understanding the operating principles and areas of application of machine elements. Students will learn how to select individual machine elements according to customer requirements (specifications vs. functional specifications) and how to combine them sensibly to create a functional technical product.

In addition, methods and procedures for the design, construction and evaluation of technical products with regard to their service life and reliability are taught. Essential skills and ways of thinking that characterize the language of the engineer, such as the creation of sketches, technical drawings and the use of computer-aided programs (e.g., NX, Creo, KiSSsoft), are also promoted.

#### **Interdisciplinary Competence**

In addition, the course aims to develop your systematic, analytical and abstract thinking, promote your creativity and sharpen your technical and business judgment. In this way, you will be optimally prepared for the challenges of engineering practice.

Students will also develop their generic skills, particularly in the areas of interpersonal skills and independence. They will develop an awareness of the effects of failed machine elements, which will strengthen their sense of responsibility in terms of product liability and social responsibility.

#### Course Content    The following topics are covered in the “Machine Elements 2” module:

- Axles and Shafts
- Shaft-hub connections
- Bearings
- Seals
- Couplings
- Gears

## Literature

### Lecture notes

Mott, R. L.: Machine Elements in Mechanical Design, Pearson, ISBN: 978-0-13-507793-1, 2013.

Schmid, S. R.; Hamrock, B. J.; Jacobson, H. B. O.: Fundamentals of Machine Elements, CRC Press, Taylor & Francis Group, ISBN: 978-0-42-9171291, 2013.

Wie, J.: Analysis and Design of Machine Elements, John Wiley & Sons, 2019.

Childs, P. R. N.: Mechanical Design Engineering Handbook, Elsevier Ltd., ISBN: 978-0-08-097759-1, 2014.

Narayana, K. L.; Kannaiah, P.; Venkata Reddy, K.: Machine Drawing, New Age international Publisher, ISBN: 978-81-224-2518-5, 2006.

Norton, L. R.: Machine Design, Pearson, 2011.

Collins, J. A.; Busby, H.; Staab, G.: Mechanical Design of Machine Elements and Machines, John Wiley & Sons, ISBN: 978-0-470-41303-6, 2010.

Juvinall, R. C.; Marshek, K. M.: Fundamentals of Machine Component Design, John Wiley & Sons, ISBN-13: 9781118012895, 2012.

Giesecke, F. E.; Mitchell, A.; Spencer, H. C.; Hill, I. L.; Dygdon, J, T.: Technical Drawing, Pearson Education (US); ISSN: 978-0-13-461971-2, 1999.

Madsen, D.: Engineering Drawing and Design, Delmar Cengage Learning, ISBN: 978-1-305-65972-8, 2016.

Fritz; Hoischen: Technisches Zeichnen, Cornelsen, ISBN: 978-3-06-452487-3, 2024.

## Included Courses (LV)

| LV-Nr. | Course Name              | Professor                  | Type <sup>43</sup> | SWS | CP |
|--------|--------------------------|----------------------------|--------------------|-----|----|
| 88410  | Applied Machine Elements | Prof. Dr. Alexander Kremer | V, L, Ü            | 6   | 5  |

## Module Examination (Prerequisite for the Award of Credit Points)

| LV-Nr. | Type and Duration of Proof of Performance <sup>44</sup> | Determination of Module Grades | Comments            |
|--------|---------------------------------------------------------|--------------------------------|---------------------|
| 88410  | PLK (120 Minutes)                                       | 100%                           |                     |
| 88410  | PLL                                                     | Not graded                     | During the semester |

## Requirements for Admission to the Module Exam

- Successful Completion of Assignments
- Successful Participation in Laboratory

## Further Study-Related Feedback

none

## Comments

none

**Last Update:** 03.12.2024, Prof. Dr. Alexander Kremer

<sup>43</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

<sup>44</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

**Module Number: 63010**

**SPO-Version: 34**

## **Product Development and Product Management**

|                                   |                                                           |
|-----------------------------------|-----------------------------------------------------------|
| <b>Degree Program</b>             | Sales Engineering – Bachelor of Engineering (B.Eng.)      |
| <b>Module Manager</b>             | Prof. Dr. Alexander Grohmann                              |
| <b>Modul Type</b>                 | Mandatory Module within the study focus Sales Engineering |
| <b>Academic Semester</b>          | 4. Semester                                               |
| <b>Module Duration</b>            | 1 Semester                                                |
| <b>Number LV</b>                  | 1                                                         |
| <b>Offered</b>                    | Winter Semester, Summer Semester                          |
| <b>Credits</b>                    | 5 CP                                                      |
| <b>Workload Class</b>             | 60 Hours                                                  |
| <b>Workload Self-Study</b>        | 90 Hours                                                  |
| <b>Participation Requirements</b> | none                                                      |
| <b>Use in other SG</b>            | none                                                      |
| <b>Language</b>                   | English                                                   |

---

### **Module Objectives**

#### **Professional Competence**

The students are able to describe the special requirements for products and their life cycle. They can plan, develop and manage products comprehensively and sustainably and apply the methods they have learned. The students are able to explain the processes and technical terms in product development and product management as well as essential instruments and methods of product management. They are able to design products in such a way that they meet the social, ecological and economic aspects of the circular economy, also in the context of professional application lifecycle management. Due to the increasing hybridization of products with digital components, the students are able to classify the Internet of Things in the context of product development and product management. The students can name, assess and evaluate all components in the context of the hybridization of products. Furthermore, the students are able to lead and manage the product development process in the field of AI products. They are able to apply aids, tools and methods in product development and product management. They can use aids and tools, in particular for product conception and idea generation, product planning, product development and product strategy. The students can name and explain various product management concepts and describe similarities and differences. The students can discuss the topics of product development and product management in English.

#### **Interdisciplinary Competence**

The students can work and cooperate in an international environment in an interdisciplinary manner. They are able to tackle and solve problems in a team, discuss results in English, coordinate with other groups and present results. The students can prepare topics together, present them critically and show concrete examples of their possible applications.

**Course Content Product Development**

Conception and idea generation, requirements analysis, design thinking and user- centrity, methods of agile product development, sustainable product design and product design, prototyping and rapid development, AI Development Process

**Product Management**

Market research and analysis, requirements gathering, prioritization, risk management, product strategy, roadmapping, data-driven decision making, performance measurement and iterative improvement, life cycle management, resource management, product-related marketing

**Literature**

Andersen, A., McAllister, C. and Harris, E. (2024): Product Development and Management Body of Knowledge: A Guidebook for Product Innovation Training and Certification, Wiley.  
Aumayr, K.J. (2023): Successful Product Management. Springer Gabler, Wiesbaden.  
Bäckström, K., Egan-Wyer, C. and Samsioe, E. (2024): The Future of Consumption. PalgraveMacmillan, Cham.  
Borgmeier, A., Grohmann, A. and Gross, S. (2021): Smart Services und Internet der Dinge: Geschäftsmodelle, Umsetzung und Best Practices. 2. Aufl., Hanser, München.  
Levine, U. (2023): Fall in Love with the Problem, Not the Solution: A handbook for entrepreneurs, Watkins.  
Nika, M. (2025): Building AI-Powered Products: The Essential Guide to AI Product Management, O'Reilley  
Sharma, V., Poullose, J. and Maheshkar, C. (2023): Analytics Enabled Decision Making. Palgrave Macmillan, Singapore.  
Tintelnot, C. (2023): Integriertes Produkt- und Vertriebsmanagement im B2B. Springer Gabler, Wiesbaden.

**Included Courses (LV)**

| LV-Nr. | Course Name                                | Professor                    | Type <sup>45</sup> | SWS | CP |
|--------|--------------------------------------------|------------------------------|--------------------|-----|----|
| 63111  | Product Development and Product Management | Prof. Dr. Alexander Grohmann | V                  | 4   | 5  |

**Module Examination (Prerequisite for the Award of Credit Points)**

| LV-Nr. | Type and Duration of Proof of Performance <sup>46</sup> | Determination of Module Grades | Comments |
|--------|---------------------------------------------------------|--------------------------------|----------|
| 63111  | PLK 90 Min                                              | 100%                           | English  |

**Requirements for Admission to the Module Exam**

none

**Further Study-Related Feedback**

none

**Comments**

none

**Last Update:** 08.09.2025, Prof. Dr. Alexander Grohmann

<sup>45</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

<sup>46</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

**Module Number: 63011**

**SPO-Version: 34**

## **Innovative Value Design and Service Systems**

|                                   |                                                           |
|-----------------------------------|-----------------------------------------------------------|
| <b>Degree Program</b>             | Sales Engineering – Bachelor of Engineering (B.Eng.)      |
| <b>Module Manager</b>             | Prof. Dr. Arndt Borgmeier                                 |
| <b>Modul Type</b>                 | Mandatory Module within the study focus Sales Engineering |
| <b>Academic Semester</b>          | 4. Semester                                               |
| <b>Module Duration</b>            | 1 Semester                                                |
| <b>Number LV</b>                  | 1                                                         |
| <b>Offered</b>                    | Winter Semester, Summer Semester                          |
| <b>Credits</b>                    | 5 CP                                                      |
| <b>Workload Class</b>             | 60 Hours                                                  |
| <b>Workload Self-Study</b>        | 90 Hours                                                  |
| <b>Participation Requirements</b> | none                                                      |
| <b>Use in other SG</b>            | none                                                      |
| <b>Language</b>                   | English                                                   |

---

### **Module Objectives**

#### **Professional Competence**

Students are able to explain, discuss and apply basic concepts, basic knowledge and core tasks of service development in a differentiated manner. They associate the basics of service theory, apply them to specific situations to optimize services and derive decisions from them.

They identify the necessary processes, analyze them and critically evaluate their aspects. Students are able to assess the challenges that arise and the organizational consequences.

Students are able to recognize and classify complex technical and economic services as services and design them specifically and sustainably. They are able to explain phase and process models as well as methods and instruments for the systematic planning, design and management of services, apply them in a differentiated manner and discuss them with regard to organizational consequences:

Based on specific questions, participants use various thought models and approaches to systematically record and assess complex service issues and derive well-founded decisions on them. They are able to select typical tools for these tasks, adapt them to the situation if necessary and apply them to specific situations.

#### **Interdisciplinary Competence**

Students are able to discuss case studies in teams and develop solutions together. They make their own independent contributions to groups in order to solve exercises. They take responsibility for the group, communicate with each other in a solution-oriented manner and support each other.

They are able to research information, evaluate the quality of sources found, use suitable material, document it scientifically and discuss it professionally. In some cases, they use a foreign language (English) and become aware of the importance of English in the module context.

**Course Content** Meaning, definitions and explanations of terms; nature of science; basics of service engineering; economic significance and relevance of service; digital services; Structuring of services and technical services  
Fundamentals of service theory: intangibility and its consequences; service co- production/ integration of external factors;  
Resource, process and result orientation; business model innovation and its influence on (digital) services (business model canvas and value proposition design)  
Process models; selected methods of service engineering and service design  
Service quality and design of the customer interface (vignette technique, different product development methodology, service blueprinting, etc.);  
Service marketing (7P model): Physical Environment, Processes, People; SoftSkills as a success factor for services and intercultural characteristics.  
Case studies and exercises: e.g. remote services/ after sales services, e.g. in mechanical and plant engineering.

**Literature** Stickdorn, Marc; Schneider, Jakob et al.: This is Servis Design Thinking. Basics, Tools, Cases, 2014.  
Stickdorn, Marc; Hormess, Markus; Lawrence, Adam; Schneider, Jakob (Hrsg.): This is Service Design Doing: Applying Service Design Thinking in the Real World, 2017.  
<https://www.thisisservicedesigndoing.com/methods> (Sept, 12th 2025)  
Wirtz, Jochen; Lovelock, Christopher: Services Marketing: People, Technology, Strategy, 9th edition, 2021.  
Kalbach, Jim: Mapping Experiences, 2016.  
Altenfelder, Kai; Schönfeld, Dieter; Krenkler, Wolfgang (Hrsg.): Services Management und digitale Transformation: Impulse und Beispiele für die erfolgreiche Umsetzung digitaler Services, Berlin, 2021.  
Articles, excerpts, videos, case studies, presentations and case studies.

#### Included Courses (LV)

| LV-Nr. | Course Name                                 | Professor                 | Type <sup>47</sup> | SWS | CP |
|--------|---------------------------------------------|---------------------------|--------------------|-----|----|
| 63112  | Innovative Value Design and Service Systems | Prof. Dr. Arndt Borgmeier | V                  | 4   | 5  |

#### Module Examination (Prerequisite for the Award of Credit Points)

| LV-Nr. | Type and Duration of Proof of Performance <sup>48</sup> | Determination of Module Grades | Comments            |
|--------|---------------------------------------------------------|--------------------------------|---------------------|
| 63112  | PLP                                                     | 100%                           | During the semester |

#### Requirements for Admission to the Module Exam

none

#### Further Study-Related Feedback

Interim Presentation and Discussion of Student Assignments; plus group exercises during the module

#### Comments

none

**Last Update:** 12.09.2025, Prof. Dr. Arndt Borgmeier

<sup>47</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

<sup>48</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

## Module Number: 62048

### Operational and strategic Sales

SPO-Version: 34

|                                   |                                                           |
|-----------------------------------|-----------------------------------------------------------|
| <b>Degree Program</b>             | Sales Engineering – Bachelor of Engineering (B.Eng.)      |
| <b>Module Manager</b>             | Prof. Dr. Christian Uhl                                   |
| <b>Modul Type</b>                 | Mandatory Module within the study focus Sales Engineering |
| <b>Academic Semester</b>          | 4. Semester                                               |
| <b>Module Duration</b>            | 1 Semester                                                |
| <b>Number LV</b>                  | 1                                                         |
| <b>Offered</b>                    | Winter Semester                                           |
| <b>Credits</b>                    | 5 CP                                                      |
| <b>Workload Class</b>             | 60 Hours                                                  |
| <b>Workload Self-Study</b>        | 90 Hours                                                  |
| <b>Participation Requirements</b> | none                                                      |
| <b>Use in other SG</b>            | none                                                      |
| <b>Language</b>                   | English                                                   |

---

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Objectives</b> | <p><b>Professional Competence</b></p> <p>The students are able to independently acquire customers as a sales engineer, obtain and process inquiries and conduct sales negotiations with customers. They apply the learned sales methods, sales tools and conversation techniques. You are able to interpret your own sales activities and controlling the results. Students can establish and expand sustainable business relationships with a customer. You can describe the basic processes of sales management and have carried out initial practical exercises.</p> <p><b>Interdisciplinary Competence</b></p> <p>Students are able to communicate adequately, to focus their work on people rather than facts, and to analyze and take social hierarchies in business into account.</p>                                                                                                                                                                          |
| <b>Course Content</b>    | Building sustainable business relationships, getting to know and using the tools of sales, getting to know the different sales channels, the ordering process, the sales process, organizational forms of sales, advertising/marketing in technical sales, acquisition and submission of offers, sales planning, operational planning, international aspects.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Literature</b>        | <p>Cuevas, J.M., Donaldson, B. and Lemmens, R. (2016): Sales Management. Strategy, Process and Practice. 4th Edition.</p> <p>Dover, H. (2022): The Sales Innovation Paradox, River Grove Books.</p> <p>Armbruster, J. (2020): B2B Sales Degree.</p> <p>Englander, D. (2015): The B2B Sales Blueprint. A hands-on-Guide to generate more Leads, closing more Deals, and working less.</p> <p>Merit (2016): The next Generation of B2B Buyers. How the Millenials Business Buyers changing B2B Sales &amp; Marketing. Harisburg, Chicago, San Francisco, Portland.</p> <p>Gitomer, J. (2015): Jeffrey Gitomer's Sales Bible. The Ultimate Sales Resource.</p> <p>Merit (2016): The next Generation of B2B Buyers. How the Millenials Business Buyers changing B2B Sales &amp; Marketing. Harisburg, Chicago, San Francisco, Portland.</p> <p>Ropponen, J. (2019): Sales Habits of Winners. Master the Fundamentals of B2B Sales with easy-to-understand Checklists.</p> |

**Included Courses (LV)**

| LV-Nr. | Course Name                     | Professor     | Type <sup>49</sup> | SWS | CP |
|--------|---------------------------------|---------------|--------------------|-----|----|
| 62412  | Operational and strategic Sales | Prof. Dr. Uhl | V, P               | 4   | 5  |

**Module Examination** (Prerequisite for the Award of Credit Points)

| LV-Nr. | Type and Duration of Proof of Performance <sup>50</sup> | Determination of Module Grades | Comments                |
|--------|---------------------------------------------------------|--------------------------------|-------------------------|
| 62412  | PLP and PMC 60                                          | PLP 1/3; PMC 2/3               | PLP During the semester |

**Requirements for Admission to the Module Exam**

none

**Further Study-Related Feedback**

none

**Comments**

none

**Last Update:** 06.08.2025, Prof. Dr. Uhl

---

<sup>49</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

<sup>50</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

## Module Number: 63013

### Value Chain Management 1

SPO-Version: 34

|                                   |                                                           |
|-----------------------------------|-----------------------------------------------------------|
| <b>Degree Program</b>             | Sales Engineering – Bachelor of Engineering (B.Eng.)      |
| <b>Module Manager</b>             | Prof. Dr. Rainer Eber                                     |
| <b>Modul Type</b>                 | Mandatory Module within the study focus Sales Engineering |
| <b>Academic Semester</b>          | 6. Semester                                               |
| <b>Module Duration</b>            | 1 Semester                                                |
| <b>Number LV</b>                  | 1                                                         |
| <b>Offered</b>                    | Winter Semester                                           |
| <b>Credits</b>                    | 5 CP                                                      |
| <b>Workload Class</b>             | 60 Hours                                                  |
| <b>Workload Self-Study</b>        | 90 Hours                                                  |
| <b>Participation Requirements</b> | none                                                      |
| <b>Use in other SG</b>            | none                                                      |
| <b>Language</b>                   | English                                                   |

---

#### Module Objectives

##### Professional Competence

Students are able to explain the importance of procurement, production and logistics in supply chain management. Students can explain the complexity of global value networks of modern technology companies. They use important KPI's in SCM and are able to calculate them. They analyze the importance of sufficient SRM for sales success and derive strategic measures for supplier retention. In doing so, they take into account the importance of competition along value chains. Students can apply methods like ABC-analysis or LPP.

##### Interdisciplinary Competence

Students enlarge their social competence with the help of team exercises. Students can understand and discuss complex technical topics in a foreign language. In parts, they can present content in a foreign language

#### Course Content

- Introduction and Overview (e.g. value adding, KPI's)
- Procurement (e.g. Purchasing process and sourcing strategies, Supplier relationship management)
- Production (e.g. MoB-decisions, production types like MTO or MTS)
- Logistics (e.g. Inventory management, transportation and storage)
- SCM-Models and more (e.g. SCOR-Model)
- SCM-Strategy – Concepts, methods and systems (e.g. Bullwhip-effect, Information and communication systems, SCM-design and planning)

## Literature

- Kummer, S. (Hrsg.), Grün, O., Jammerneegg, W.: Grundzüge der Beschaffung, Produktion und Logistik. 3. Auflage, 2013, Pearson.
  - Ivanov, D. et al.: Global Supply Chain and Operations Management. 2nd edition, 2019, Springer.\*
  - Arnolds H.; Hegge, F.; Röh, C.; Tussing, W.: Materialwirtschaft und Einkauf. 13. Auflage, 2016, Springer.
  - Koch, S.: Logistik. Springer.
  - Kluck, D.: Materialwirtschaft und Logistik. Schäffer-Pöschel.
  - Werner, H.: Supply Chain Management: Grundlagen, Strategien, Instrumente und Controlling, Springer. • Chopra, S., Meindl, P.: Supply Chain Management, Pearson.\*
  - Eßig, M., Hofmann, E., Stölzle, W.: Supply Chain Management, Vahlen.
- \* In English

## Included Courses (LV)

| LV-Nr. | Course Name               | Professor             | Type <sup>51</sup> | SWS | CP |
|--------|---------------------------|-----------------------|--------------------|-----|----|
| 63114  | Supply Chain Management 1 | Prof. Dr. Rainer Eber | V, Ü               | 4   | 5  |

## Module Examination (Prerequisite for the Award of Credit Points)

| LV-Nr. | Type and Duration of Proof of Performance <sup>52</sup> | Determination of Module Grades | Comments |
|--------|---------------------------------------------------------|--------------------------------|----------|
| 63114  | PLK (60 Minutes)                                        | 100%                           |          |

## Requirements for Admission to the Module Exam

none

## Further Study-Related Feedback

none

## Comments

none

**Last Update:** 15.09.2025, Prof. Dr. Rainer Eber

---

<sup>51</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

<sup>52</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

## Module Number: 63014

### AI in B2B Sales

SPO-Version: 34

|                            |                                                                                                            |
|----------------------------|------------------------------------------------------------------------------------------------------------|
| Degree Program             | Sales Engineering – Bachelor of Engineering (B.Eng.)                                                       |
| Module Manager             | Prof. Dr. Alexander Grohmann                                                                               |
| Modul Type                 | Mandatory Module within the study focus Sales Engineering                                                  |
| Academic Semester          | 6. Semester                                                                                                |
| Module Duration            | 1 Semester                                                                                                 |
| Number LV                  | 1                                                                                                          |
| Offered                    | Winter Semester, Summer Semester                                                                           |
| Credits                    | 5 CP                                                                                                       |
| Workload Class             | 60 Hours                                                                                                   |
| Workload Self-Study        | 90 Hours                                                                                                   |
| Participation Requirements | Completed modules: Computer Science and Applications, B2B Marketing, Personal Selling and Sales Management |
| Use in other SG            | none                                                                                                       |
| Language                   | English                                                                                                    |

---

#### Module Objectives

##### Professional Competence

Students can explain core AI concepts and categorize them by capability and functionality (ML, NLP, recommender systems, optimization, GenAI) and **map them to B2B sales use-cases** (ICP/segmentation, lead scoring, opportunity forecasting, pricing & discounting, churn/retention, next-best-action, proposal automation). They can summarize the impact of AI on the modern customer, buying behaviour and derive this impact in future sales requirements, such as mapping the digital customer journey, build data-driven customer profiles or utilize AI for customer segmentation. Students can **design data pipelines** for sales AI (data sources, feature engineering, data quality, bias checks) and select suitable model classes and evaluation metrics.

Students can apply **prompt engineering and RAG** for sales content (research, discovery questions, proposal drafts) and assess accuracy, risks, and guardrails;

Students can set up **human-in-the-loop** decisioning and A/B tests to quantify impact (win-rate, cycle time, margin uplift, forecast accuracy). Furthermore, Students can explain **governance and compliance** for AI in sales (EU AI Act basics, transparency, privacy, model risk).

They are able to use AI in several sales activities, such as Lead Generation, generate Sales presentations, negotiation and closing strategies as well as sales forecasting, up- and cross selling.

##### Interdisciplinary Competence

Students can evaluate ethical implications (fairness, explainability, sustainability) and communicate model limits to non-technical stakeholders. They can collaborate across disciplines and prepare AI-assisted workflows.

**Course Content** AI fundamentals & taxonomy, Digital customer & journey: buying behavior, journey mapping, data-driven profiles, AI-based segmentation, data pipelines, sources (CRM/MA/CPQ/CLM), feature engineering, data quality, bias/leakage checks, Models & metrics, GenAI practice, risks & guardrails, Human-in-the-loop & experiments: review workflows, A/B tests, KPIs (win-rate, cycle time, margin, forecast accuracy), Governance & compliance: EU AI Act basics, transparency, privacy/GDPR, model risk, model/data cards, AI in sales activities: lead generation, sales presentations, negotiation/closing support, forecasting, up-/cross-sell, RevOps collaboration, Ethics & sustainability: fairness, explainability, sustainability considerations, Enablement outputs: executive briefs, playbooks, dos & don'ts, sales-ready templates

**Literature**

Bain & Company (2025): AI Is Transforming Productivity, but Sales Remains a New Frontier (<https://www.bain.com/insights/ai-transforming-productivity-sales-remains-new-frontier/>)

Beuk, F. and Payne, D. (2025): Modern Sales Strategies in the Age of AI, Kendall Hunt.

**Davenport, T.H. and Sterne, J. (2025).** *The New Science of Customer Relationships: Delivering the One-to-One Promise with AI.* Hoboken, NJ: John Wiley & Sons. Verfügbar unter: Wiley.

Forrester (2024): B2B Buyer Adoption of Generative AI (<https://www.forrester.com/report/b2b-buyer-adoption-of-generative-ai/RES181769> Forrester)

Harvard Business Review (2025): How One Company Used AI to Broaden Its Customer Base (<https://hbr.org/2025/03/how-one-company-used-ai-to-broaden-its-customer-base>)

McKinsey & Company (2025): The State of AI: How organizations are rewiring to capture (<https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai>)

Salesforce (2024): State of Sales Report (<https://www.salesforce.com/resources/research-reports/state-of-sales/>)

#### Included Courses (LV)

| LV-Nr. | Course Name     | Professor                    | Type <sup>53</sup> | SWS | CP |
|--------|-----------------|------------------------------|--------------------|-----|----|
| 63115  | AI in B2B Sales | Prof. Dr. Alexander Grohmann | V                  | 4   | 5  |

#### Module Examination (Prerequisite for the Award of Credit Points)

| LV-Nr. | Type and Duration of Proof of Performance <sup>54</sup> | Determination of Module Grades | Comments |
|--------|---------------------------------------------------------|--------------------------------|----------|
| 63115  | PLK (90 Minutes)                                        | 100%                           |          |

<sup>53</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

<sup>54</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

**Requirements for Admission to the Module Exam**  
none

**Further Study-Related Feedback**  
none

**Comments**  
none

**Last Update:** 08.09.2025, Prof. Dr. Alexander Grohmann

## Module Number: 62049

### International Business and Marketing

SPO-Version: 34

|                                   |                                                                               |
|-----------------------------------|-------------------------------------------------------------------------------|
| <b>Degree Program</b>             | Sales Engineering – Bachelor of Engineering (B.Eng.)                          |
| <b>Module Manager</b>             | Prof. Dr. Marc Falko Schrader                                                 |
| <b>Modul Type</b>                 | Mandatory Module within the study focus Sales Engineering                     |
| <b>Academic Semester</b>          | 6. Semester                                                                   |
| <b>Module Duration</b>            | 1 Semester                                                                    |
| <b>Number LV</b>                  | 1                                                                             |
| <b>Offered</b>                    | Winter Semester, Summer Semester                                              |
| <b>Credits</b>                    | 5 CP                                                                          |
| <b>Workload Class</b>             | 60 Hours                                                                      |
| <b>Workload Self-Study</b>        | 90 Hours                                                                      |
| <b>Participation Requirements</b> | Internship completed, passed exams „Business administration“ and „Management“ |
| <b>Use in other SG</b>            |                                                                               |
| <b>Language</b>                   | English                                                                       |

---

|                          |                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Objectives</b> | <p><b>Professional Competence</b></p> <p>Students will be able to analyze and assess the key elements of international business, including global trade dynamics, intercultural differences, and market entry strategies. They have the ability to evaluate and apply appropriate business and marketing strategies in various international contexts.</p> |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**Interdisciplinary Competence**

Students develop an interdisciplinary understanding of international business by integrating perspectives from economics, marketing, and cultural studies. They will be able to analyze how global trade policies, cultural differences, and market conditions influence strategic business and other decisions. Students can collaboratively address and solve problems, discuss results, and coordinate with other groups.

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Course Content</b> | <p><b>International Trade</b></p> <ul style="list-style-type: none"><li>• Overview of International Trade: The importance of international trade for economic growth and global market dynamics.</li><li>• Globalization and Internationalization: Benefits and challenges of internationalization, especially for German companies. Impact of globalization on trade flows and competition.</li><li>• Trade Data: Analysis of real-world trade statistics and key data relevant to international business, with a focus on German exports.</li></ul> <p><b>Intercultural Differences (Hofstede's Dimensions of Culture)</b></p> <ul style="list-style-type: none"><li>• Intercultural Communication: The role of culture in shaping business practices and organizational structures globally.</li><li>• Hofstede's Cultural Dimensions: Key dimensions (e.g. Individualism vs. Collectivism) and their influence on international business and communication.</li></ul> <p><b>International Market Entry</b></p> <ul style="list-style-type: none"><li>• Market Entry Strategies: Overview of strategies like exporting, joint ventures, and franchising. How to assess market potential and select the right entry method.</li><li>• Market Entry Challenges: Considering barriers to entry such as risks, tariffs, and local competition.</li></ul> |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**Literature**      Newest edition of:  
M.R. Czinkota and I.A. Ronkainen: International Marketing, Thomson-South Western  
S. Müller and K. Gelbrich: Interkulturelles Marketing, Vahlen, recent media content, e.g.  
from  
„The Economist“, „Journal of International Marketing“ or „Journal of International Business Studies“

**Included Courses (LV)**

| LV-Nr. | Course Name                          | Professor          | Type <sup>55</sup> | SWS | CP |
|--------|--------------------------------------|--------------------|--------------------|-----|----|
| 62611  | International Business and Marketing | Prof. Dr. Schrader | V, S               | 4   | 5  |

**Module Examination (Prerequisite for the Award of Credit Points)**

| LV-Nr. | Type and Duration of Proof of Performance <sup>56</sup> | Determination of Module Grades | Comments            |
|--------|---------------------------------------------------------|--------------------------------|---------------------|
| 62611  | PLK 60 and PLR                                          | 50% PLK and 50% PLR            | During the semester |

**Requirements for Admission to the Module Exam**

Successful passed PLR of the module 62611

**Further Study-Related Feedback**

none

**Comments**

none

**Last Update:** 13.11.2023, Prof. Dr. Marc Falko Schrader

---

<sup>55</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

<sup>56</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

## Module Number: 63015

### Sales Lab: Negotiation Coaching

SPO-Version: 34

|                                   |                                                           |
|-----------------------------------|-----------------------------------------------------------|
| <b>Degree Program</b>             | Sales Engineering – Bachelor of Engineering (B.Eng.)      |
| <b>Module Manager</b>             | Prof. Dr. Christian Uhl                                   |
| <b>Modul Type</b>                 | Mandatory Module within the study focus Sales Engineering |
| <b>Academic Semester</b>          | 6. Semester                                               |
| <b>Module Duration</b>            | 1 Semester                                                |
| <b>Number LV</b>                  | 2                                                         |
| <b>Offered</b>                    | Winter Semester                                           |
| <b>Credits</b>                    | 5 CP                                                      |
| <b>Workload Class</b>             | 60 Hours                                                  |
| <b>Workload Self-Study</b>        | 90 Hours                                                  |
| <b>Participation Requirements</b> | none                                                      |
| <b>Use in other SG</b>            | none                                                      |
| <b>Language</b>                   | English                                                   |

---

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Objectives</b> | <p><b>Professional Competence</b></p> <p>The students can develop and record the customer's needs. You can create and compare offers and make an adapted offer to the customer and negotiate in a targeted manner. You can conduct hybrid sales discussions and strategically take into account that building a sustainable business relationship is more important than a quick negotiation success. You are able to recognize commercial connections and customer benefits as well as carry out cost calculations and apply them to specific cases. You can work with modern Sales and Marketing tools like e.g. CRM, Marketing Automation, AI Sales Agents...</p> <p><b>Interdisciplinary Competence</b></p> <p>Students are able to present and represent companies, products and offers at a professional level. They can argue strategically, act socially and communicate mediatively. When dealing with customers, they are able to take economic, ecological and ethical aspects into account. Students are able to communicate adequately as well as digital and real, to focus their work on people and facts, and to analyze and take social hierarchies in business into account.</p> |
| <b>Course Content</b>    | <p>Pitching of products and companies. Creating an offer or tender, comparing offers, negotiating the offer, negotiation and discussion techniques, developing win-win situations, concluding negotiations, developing a sustainable business relationship. Usage of modern tools including AI to prepare for business communications.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Literature</b>        | <p>Dover, H. (2022): The Sales Innovation Paradox, River Grove Books.</p> <p>Armbruster, J. (2020): B2B Sales Degree.</p> <p>Englander, D. (2015): The B2b Sales Blueprint. A hands-on-Guide to generate more Leads, closing more Deals, and working less.</p> <p>Merit (2016): The next Generation of B2B Buyers. How the Millenials Business Buyers changing B2B Sales &amp; Marketing. Harisburg, Chicago, San Francisco, Portland.</p> <p>Gitomer, J. (2015): Jeffrey Gitomer's Sales Bible. The Ultimate Sales Resource.</p> <p>Merit (2016): The next Generation of B2B Buyers. How the Millenials Business Buyers changing B2b Sales &amp; Marketing. Harisburg, Chicago, San Francisco, Portland.</p> <p>Ropponen, J. (2019): Sales Habits of Winners. Master the Fundamentals of B2B Sales with easy-to-understand Checklists.</p>                                                                                                                                                                                                                                                                                                                                                        |

**Included Courses (LV)**

| LV-Nr. | Course Name          | Professor                       | Type <sup>57</sup> | SWS | CP  |
|--------|----------------------|---------------------------------|--------------------|-----|-----|
| 63116  | Sales Lab            | Prof. Dr. Uhl                   | V, L               | 2   | 2,5 |
| 63117  | Negotiation Coaching | External lecturer from industry | V, L               | 2   | 2,5 |

**Module Examination (Prerequisite for the Award of Credit Points)**

| LV-Nr. | Type and Duration of Proof of Performance <sup>58</sup> | Determination of Module Grades | Comments            |
|--------|---------------------------------------------------------|--------------------------------|---------------------|
| 63116  | PLP                                                     | 50%                            | During the semester |
| 63117  | PLM                                                     | 50%                            |                     |

**Requirements for Admission to the Module Exam**

none

**Further Study-Related Feedback**

none

**Comments**

none

**Last Update:** 06.08.2025, Prof. Dr. Uhl

---

<sup>57</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

<sup>58</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

## Module Number: 63016

### Digital Sales and CRM

SPO-Version: 34

|                                   |                                                                                                          |
|-----------------------------------|----------------------------------------------------------------------------------------------------------|
| <b>Degree Program</b>             | Sales Engineering – Bachelor of Engineering (B.Eng.)                                                     |
| <b>Module Manager</b>             | Prof. Dr. Alexander Grohmann                                                                             |
| <b>Modul Type</b>                 | Mandatory Module within the study focus Sales Engineering                                                |
| <b>Academic Semester</b>          | 7. Semester                                                                                              |
| <b>Module Duration</b>            | 1 Semester                                                                                               |
| <b>Number LV</b>                  | 1                                                                                                        |
| <b>Offered</b>                    | Winter Semester, Summer Semester                                                                         |
| <b>Credits</b>                    | 5 CP                                                                                                     |
| <b>Workload Class</b>             | 60 Hours                                                                                                 |
| <b>Workload Self-Study</b>        | 90 Hours                                                                                                 |
| <b>Participation Requirements</b> | Completed modules: B2B Marketing, Personal Selling and Sales Management, Operational and strategic Sales |
| <b>Use in other SG</b>            | none                                                                                                     |
| <b>Language</b>                   | English                                                                                                  |

---

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Objectives</b> | <p><b>Professional Competence</b></p> <p>Students can explain, design, manage and interact in hybrid and digital business-to-business sales environments as well as manage Customer Relationship Management (CRM) Systems and other Sales Tools in the organizational B2B context. Students can discuss how digitalization reshapes sales strategy, processes, roles, behaviour and the buyer journey, and how to orchestrate omnichannel motions around the CRM. Furthermore, students can explain the new approach of Demand Generation, assess modern buyers (informed, self-serve generation), data availability and technology convergence, and translate their findings into viable business models and improved sales processes and sales organizations. They can apply tools and methods purposefully: select and deploy sales tools and new business models to achieve concrete outcomes. They can manage complexity and change in digital sales and make differentiated, evidence-based decisions. Students can assess efficiency and sustainability impacts of digital technologies and configure a modern sales stack with the CRM as system of record, outline adjacent tools (marketing automation, Configure-Price-Quote, Customer Lifecycle Management, Customer Data Platform, Revenue Intelligence) and their data flows. They are able to model data and hygiene: define objects, deduplication, consent; build pipelines, stages, and Service Level Agreements aligned to Ideal Customer Profiles. Students can execute CRM-driven campaigns and create buyer-enablement assets as well as read core dashboards (pipeline health, conversion, cycle time, forecast hygiene). Students can apply governance basics to digital sales content and follow light AI-usage policies (no model mechanics). Furthermore, students can explain different CRM Systems and their functionality. Additionally, Students conduct negotiations in the Sales Lab and incorporate Customer Relationship Management considerations into preparation and execution.</p> <p><b>Interdisciplinary Competence</b></p> <p>The students can analyze given questions, research information and develop solutions. They are able to familiarize themselves independently with new subject areas.</p> |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**Course Content** Digital sales, digital sales management, sales innovation gap through digitalization, sales innovation paradox, customer journey, customer centric sales funnel, stages of the customer's online journey, building a sales stack, CRM, application services and platform services, mapping and use of sales tools, Salesforce, Hubspot, Zoho, Pipedrive, Sales Operations Center, business models, data, sales negotiations

**Literature**

Kearney, A.T. (2016): Study „The Future of B2B Sales“, Stuttgart.

Bain & Company (2015): Bought Not Sold: Marketing and Selling to Digitally Empowered Business Customers Traditional marketing and sales models have reached their expiration date, Dallas, Chicago, München, Boston.

Beuk, F. and Payne, D. (2025): Modern Sales Strategies in the Age of Artificial Intelligence, Kendall Hunt.

Biesel, H. and Hame, H. (2018): Vertrieb und Marketing in der digitalen Welt: So schaffen Unternehmen die Business Transformation in der Praxis.

Binckebanck, E. (2016): Digitalisierung im Vertrieb, SpringerGabler.

Google / Berger, R. (2015): Study „Die digitale Zukunft des B2B Vertriebs“, München.

Buhr, A. (2019): Vertrieb geht heute anders: Das Ende des Verkaufens. Cassan, Ron (2018): Modern Sales Process: A dependable and repeatable sales process to generate and close more customers faster.

Dover, H. (2022): The Sales Innovation Paradox. River Grove Books.

Daly (2017): Digital Sales Transformation in a Customer First World, Oak Tree Press.

Katzengruber, W. and Pfortner, A. (2017): Sales 4.0 – Strategien und Konzepte für die Zukunft im Vertrieb.

Kilian, D. and Mirski, P. (2017): Digital Selling. Linde Verlag Ges.m.b.H.

Merit (2016): The next Generation of B2B Buyers. How the Millenials Business Buyers changing B2B Sales & Marketing. Harisburg, Chicago, San Francisco, Portland.

Sornson, M. (2020): Data-Driven Sales: Learn how B2B sales leaders at HubSpot, Salesloft, and other top companies use data to grow faster.

#### Included Courses (LV)

| LV-Nr. | Course Name   | Professor                | Type <sup>59</sup> | SWS | CP |
|--------|---------------|--------------------------|--------------------|-----|----|
| 63118  | Digital Sales | Prof. Alexander Grohmann | V                  | 4   | 5  |

#### Module Examination (Prerequisite for the Award of Credit Points)

| LV-Nr. | Type and Duration of Proof of Performance <sup>60</sup> | Determination of Module Grades | Comments |
|--------|---------------------------------------------------------|--------------------------------|----------|
| 63118  | PLK 90 Min                                              | 100%                           | 63118    |

#### Requirements for Admission to the Module Exam

none

#### Further Study-Related Feedback

none

#### Comments

none

**Last Update:** 08.09.2025, Prof. Dr. Alexander Grohmann

<sup>59</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

<sup>60</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

**Module Number: 63017**

**SPO-Version: 34**

## **Case Study: Sales Project**

|                                   |                                                           |
|-----------------------------------|-----------------------------------------------------------|
| <b>Degree Program</b>             | Sales Engineering – Bachelor of Engineering (B.Eng.)      |
| <b>Module Manager</b>             | Prof. Dr. Christian Uhl                                   |
| <b>Modul Type</b>                 | Mandatory Module within the study focus Sales Engineering |
| <b>Academic Semester</b>          | 7. Semester                                               |
| <b>Module Duration</b>            | 1 Semester                                                |
| <b>Number LV</b>                  | 1                                                         |
| <b>Offered</b>                    | Summer Semester                                           |
| <b>Credits</b>                    | 5 CP                                                      |
| <b>Workload Class</b>             | 60 Hours                                                  |
| <b>Workload Self-Study</b>        | 90 Hours                                                  |
| <b>Participation Requirements</b> | none                                                      |
| <b>Use in other SG</b>            | none                                                      |
| <b>Language</b>                   | English                                                   |

---

### **Module Objectives**

#### **Professional Competence**

Students are able to plan, develop and optimize a sustainable business plan in all facets using a simple product. They can analyze individual results and critically weigh their significance for the overall project. They can use modern tools within the project like AI, communication platforms, project management etc. They can describe the procedure for founding a start-up company and assess the profitability, sustainability and their risks. They are able to correct their original assumptions if problems arise during the course of the project.

#### **Interdisciplinary Competence**

The students are able to structure tasks in a group and share and interlink results. They can confidently present individual project stages and project results in the plenary session.

### **Course Content**

Integration of the most important course content in comprehensive, practical project work in which the various aspects of sustainable business life, especially sales, come together. Development of a simple product from conception and construction to market research, manufacturing analysis, marketing plan, sales plan and financing including calculation of the break-even point and profit expectations. Development of a sales strategy. Creating a sustainable and scalable business plan, creating a sales strategy, creating a product concept, presenting and selling an idea and a product. Usage of AI to be fast and competitive.

### **Literature**

Dover, H. (2022): The Sales Innovation Paradox, River Grove Books.  
Armbruster, J. (2020): B2B Sales Degree.  
Englander, D. (2015): The B2b Sales Blueprint. A hands-on-Guide to generate more Leads, closing more Deals, and working less.  
Merit (2016): The next Generation of B2B Buyers. How the Millenials Business Buyers changing B2B Sales & Marketing. Harisburg, Chicago, San Francisco, Portland.  
Gitomer (2015): Jeffrey Gitomer's Sales Bible. The Ultimate Sales Resource.  
Merit (2016): The next Generation of B2B Buyers. How the Millenials Business Buyers changing B2B Sales & Marketing. Harisburg, Chicago, San Francisco, Portland.  
Ropponen, J. (2019): Sales Habits of Winners. Master the Fundamentals of B2B Sales with easy to understand Checklists.

**Included Courses (LV)**

| LV-Nr. | Course Name               | Professor     | Type <sup>1</sup> | SWS | CP |
|--------|---------------------------|---------------|-------------------|-----|----|
| 63119  | Case Study: Sales Project | Prof. Dr. Uhl | P                 | 4   | 5  |

**Module Examination** (Prerequisite for the Award of Credit Points)

| LV-Nr. | Type and Duration of Proof of Performance <sup>2</sup> | Determination of Module Grades | Comments            |
|--------|--------------------------------------------------------|--------------------------------|---------------------|
| 63119  | PLP                                                    | 100%                           | During the semester |

**Requirements for Admission to the Module Exam**

none

**Further Study-Related Feedback**

none

**Comments**

The event is based on the individual development of partial problem solutions to an overall task in a group. It is part of the didactic concept that attendance is required for some appointments at which cross-group issues are developed and discussed. These appointments will be issued at the beginning.

**Last Update:** 06.08.2025, Prof. Dr. Uhl

**Module Number: 63012**

**SPO-Version: 34**

## **Placement Semester / Internship**

|                                   |                                                      |
|-----------------------------------|------------------------------------------------------|
| <b>Degree Program</b>             | Sales Engineering – Bachelor of Engineering (B.Eng.) |
| <b>Module Manager</b>             | Head of internship office (Praktikantenamtsleiter)   |
| <b>Modul Type</b>                 | Mandatory Module                                     |
| <b>Academic Semester</b>          | 5. Semester                                          |
| <b>Module Duration</b>            | 1 Semester                                           |
| <b>Number LV</b>                  | 1                                                    |
| <b>Offered</b>                    | Summer Semester                                      |
| <b>Credits</b>                    | 30 CP                                                |
| <b>Workload Class</b>             | 0 Hours                                              |
| <b>Workload Self-Study</b>        | 900 Hours                                            |
| <b>Participation Requirements</b> | general SPO (BA-AT) will apply                       |
| <b>Use in other SG</b>            |                                                      |
| <b>Language</b>                   | English                                              |

---

### **Module Objectives**

#### **Professional Competence**

Students are able to independently and autonomously solve practical problems in in engineering or value-adding industrial activities, taking into account the specific work on specific operational conditions. They can proceed systematically in order to use technical and economic solutions in practice apply them.

#### **Interdisciplinary Competence**

Students are able to integrate into an existing team and are motivated to make their own contributions within a working context. They can communicate effectively with other people and have a sense of responsibility, to work flexibly, consensually and in a task-oriented manner in day-to-day dealings.

They are able to consider economic, ecological, safety and ethical aspects in their work.

**Course Content** Depending on the choice of the company for the placement semester/internship.

It is strongly recommended that all students attend one of the introductory events offered by the central internship office between the 4th and 10th week of each semester.

Students can participate in an semester prior to the internship. The event will provide additional information for the organizational procedure of the internship semester and provide additional tips. Attendance is neither certified nor is it part of the examination performance.

Students are obliged to prepare a report on their internship. The guidelines for the internship semester report are an integral part of the module description and define the requirements for the internship semester report. In the semester following the placement semester, there will be a mandatory date at which students present their internship reports. Participation is mandatory and part of the examination performance.

**Literature**            none

**Included Courses (LV)**

| LV-Nr. | Course Name                   | Professor | Type <sup>61</sup> | SWS | CP |
|--------|-------------------------------|-----------|--------------------|-----|----|
| 63113  | Placement Semester/Internship | none      |                    |     | 30 |

**Module Examination (Prerequisite for the Award of Credit Points)**

| LV-Nr. | Type and Duration of Proof of Performance <sup>62</sup> | Determination of Module Grades | Comments |
|--------|---------------------------------------------------------|--------------------------------|----------|
| 63113  | PPR                                                     | ungraded                       |          |

**Requirements for Admission to the Module Exam**

none

**Further Study-Related Feedback**

none

**Comments**

-

**Last Update:** 06.09.2025, Prof. Dr. Christian Uhl

---

<sup>61</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

<sup>62</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

**Module Number: 63024-63029**

**SPO-Version: 34**

**Optional: International Semester – 6 modules**

|                                   |                                                          |
|-----------------------------------|----------------------------------------------------------|
| <b>Degree Program</b>             | Sales Engineering – Bachelor of Engineering (B.Eng.)     |
| <b>Module Manager</b>             | Dean of studies Prof. Dr. Christian Uhl                  |
| <b>Modul Type</b>                 | Optional: complete international semester with 6 Modules |
| <b>Academic Semester</b>          | 6. Semester                                              |
| <b>Module Duration</b>            | 1 Semester                                               |
| <b>Number LV</b>                  | Module dependent                                         |
| <b>Offered</b>                    | Winter Semester                                          |
| <b>Credits</b>                    | 30 CP (each module 5 CP)                                 |
| <b>Workload Class</b>             | Module dependent                                         |
| <b>Workload Self-Study</b>        | Module dependent                                         |
| <b>Participation Requirements</b> | Formal: <i>Learning agreement</i>                        |
| <b>Use in other SG</b>            |                                                          |
| <b>Language</b>                   | English                                                  |

**Module Objectives**      **Professional Competence**

During a semester abroad, the students can set their own specialisations in Sales Engineering and develop an individual skills profile. In addition, they acquire global expertise and are able to apply the knowledge acquired at the foreign university in Germany and use it for their career choice and professional practice.

**Interdisciplinary Competence**

The students acquire intercultural skills in particular and are thus able to act and react in an interculturally sensitised manner in later work situations. They also strengthen their self-organization and decision-making skills. Students also improve their academic English.

**Course Content**      The content is determined by the Learning Agreement between the coordinating institutions.

**Literature**      Module dependent

**Included Courses (LV)**

| LV-Nr.      | Course Name                               | Professor | Type <sup>63</sup> | SWS    | CP     |
|-------------|-------------------------------------------|-----------|--------------------|--------|--------|
| 63126-63130 | International Sales Engineering ESE – 1-6 |           | Module dependent   | 4 each | 5 each |
|             |                                           |           |                    |        | Sum 30 |

<sup>63</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

**Module Examination** (Prerequisite for the Award of Credit Points)

| LV-Nr.        | Type and Duration of Proof of Performance <sup>64</sup> | Determination of Module Grades | Comments                                                            |
|---------------|---------------------------------------------------------|--------------------------------|---------------------------------------------------------------------|
| 63126 – 63130 | Module dependent                                        | Module dependent               | The examination is taken in accordance with the Learning Agreement. |

**Requirements for Admission to the Module Exam:** -

**Further Study-Related Feedback:** -

**Comments:** -

**Last Update:** 29.09.2025, Prof. Dr. Christian Uhl

## Module Number: 63018

### Studium Generale

SPO-Version: 34

|                                      |                                                      |
|--------------------------------------|------------------------------------------------------|
| <b>Course of studies</b>             | Sales Engineering – Bachelor of Engineering (B.Eng.) |
| <b>Module name</b>                   | Studium Generale                                     |
| <b>Module Coordinator</b>            | Dean of Studies Prof. Dr. Christian Uhl              |
| <b>Module type</b>                   | Compulsory module                                    |
| <b>Semester</b>                      | 7. Semester                                          |
| <b>Duration</b>                      | During the study                                     |
| <b>No. of lectures</b>               |                                                      |
| <b>Begin of offer</b>                | Winter semester, Summer semester                     |
| <b>Credits</b>                       | 3 CP                                                 |
| <b>Workload Contact time</b>         | 90 hours                                             |
| <b>Workload Self study</b>           | hours                                                |
| <b>Admission requirement</b>         | --                                                   |
| <b>Relevance in courses of study</b> |                                                      |
| <b>Language</b>                      | English                                              |

---

#### Learning goals/ competence

The comprehensive education of students is expanded by courses from the Studium Generale. These courses complement the respective degree with interdisciplinary subjects. The programme enables students to deal with general scientific subjects and current topics.

Students acquire essential qualifications relevant for their later professional life. Volunteering is encouraged to build on the social skills of students.

#### Professionalism

Students are able to present complex interdisciplinary subjects and can assess their relationships. They are able to deal autonomously with socio-political questions.

#### Interdisciplinary skills

Depending on their choice of courses, students improve their teamworking skills, their time and/or conflict management or their presentation skills. Students are enabled to apply attained skills as requested.

Students acknowledge the significance of voluntary commitment to personal development and to society.

**Lecture contents**

Various courses and events are offered as part of the General Studies. Each semester has a thematic focus. The respective course content is flexible and can therefore be taken from the respective program created every semester. The courses can be attended by students at any time during their studies, but at the latest in the last semester.

In order to count the corresponding hours and credit points, a collection sheet of the workload performed as well as a written report on the completed courses must be submitted. Alternatively, voluntary or civil society commitment during studies can be performed, documented and credited. Corresponding information can be found in the "Aalen University Guidelines of the General Studies and the Achievement of Social Competence".

**Literature**

Depending on choice of courses

**Courses / lectures (LV)**

| Course no. | Title of the course / lecture | Lecturer                       | Type <sup>65</sup> | SWS | CP |
|------------|-------------------------------|--------------------------------|--------------------|-----|----|
| 63999      | Studium Generale              | Depending on choice of courses |                    |     | 3  |

**Module exam**

| Course no. | Type / length <sup>66</sup> | grading    | Comments                    |
|------------|-----------------------------|------------|-----------------------------|
| 63999      | PLS                         | Not graded | Report, during the semester |

**Admission requirement**

—

**Comments:**

**Last updated:** 06.09.2025, Prof. Dr. Christian Uhl

---

<sup>1</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

<sup>2</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

**Bachelor Thesis**

|                                   |                                                      |
|-----------------------------------|------------------------------------------------------|
| <b>Degree Program</b>             | Sales Engineering – Bachelor of Engineering (B.Eng.) |
| <b>Module Manager</b>             | Dean of Studies Prof. Dr. Christian Uhl              |
| <b>Modul Type</b>                 | Mandatory Module                                     |
| <b>Academic Semester</b>          | 7. Semester                                          |
| <b>Module Duration</b>            | 1 Semester                                           |
| <b>Number LV</b>                  | 1                                                    |
| <b>Offered</b>                    | Summer Semester                                      |
| <b>Credits</b>                    | 12 CP                                                |
| <b>Workload Class</b>             |                                                      |
| <b>Workload Self-Study</b>        | 360 Hours                                            |
| <b>Participation Requirements</b> | See SPO                                              |
| <b>Use in other SG</b>            |                                                      |
| <b>Language</b>                   | English                                              |

**Module Objectives**

**Professional competence:**  
Students can work on a task independently and comprehensively and solve specific tasks and questions using engineering procedures. Independent processing and solution of a given task from the problem definition and literature research to analysis, physical interpretation and presentation of the results. The working method is designed in such a way that students are first able to narrow down the problem and to develop adequate solution methods and tools. The work should not be one-sided and in-depth, but should solve the task in consideration of the relevant boundary conditions.

**Interdisciplinary competence:**  
Students can contribute to the team and communicate in an appropriate manner.

**Special methodological competence:**  
They apply the basic procedure for solving problems.

**Course Content** From the thematic environment of the course content

**Literature**

- Technical: to be discussed with supervisor
- Organizational: Handout of the degree program (available online)

**Included Courses (LV)**

| LV-Nr. | Course Name     | Professor                        | Type <sup>67</sup> | SWS | CP |
|--------|-----------------|----------------------------------|--------------------|-----|----|
| 9999   | Bachelor Thesis | Professors of the degree program | XX                 |     | 12 |

<sup>67</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

**Module Examination** (Prerequisite for the Award of Credit Points)

| LV-Nr. | Type and Duration of Proof of Performance <sup>68</sup> | Determination of Module Grades | Comments                                   |
|--------|---------------------------------------------------------|--------------------------------|--------------------------------------------|
| 9999   | <i>PLP</i>                                              | 100%                           | two supervisors (to be sought by students) |

**Requirements for Admission to the Module Exam**

none

**Further Study-Related Feedback**

none

**Comments**

-

**Last Update:** 17.06.2024, Prof. Dr. Christian Uhl

---

<sup>68</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).

**Elective Module 1 – 4**

|                                   |                                                       |
|-----------------------------------|-------------------------------------------------------|
| <b>Degree Program</b>             | Sales Engineering – Bachelor of Engineering (B.Eng.)  |
| <b>Module Manager</b>             | Dean of Studies Prof. Dr. Christian Uhl               |
| <b>Modul Type</b>                 | Mandatory Module                                      |
| <b>Academic Semester</b>          | 6./7. Semester                                        |
| <b>Module Duration</b>            | 1 Semester                                            |
| <b>Number LV</b>                  | Module dependent                                      |
| <b>Offered</b>                    | Summer Semester / Winter Semester                     |
| <b>Credits</b>                    | 5 CP                                                  |
| <b>Workload Class</b>             | Module dependent                                      |
| <b>Workload Self-Study</b>        | Module dependent                                      |
| <b>Participation Requirements</b> | Formal: Module dependent<br>Content: Module dependent |
| <b>Use in other SG</b>            |                                                       |
| <b>Language</b>                   | English                                               |

|                          |                                                         |
|--------------------------|---------------------------------------------------------|
| <b>Module Objectives</b> | <b>General</b><br>Module dependent                      |
|                          | <b>Professional Competence</b><br>Module dependent      |
|                          | <b>Interdisciplinary Competence</b><br>Module dependent |

**Course Content** The content is determined by the selected module

**Literature** Module dependent

**Included Courses (LV)**

| LV-Nr. | Course Name                                                                                                                                  | Professor | Type <sup>69</sup> | SWS | CP |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------------|-----|----|
|        | Elective Module<br>Depending on choice of course<br><br>According to the list of electives<br>announced at the beginning of the<br>semester? |           | V, L, Ü,<br>P ...  | 4   | 5  |

<sup>69</sup> Type of course according to: Allgemeiner Teil der SPO (§ 63 BA-TA-18-1; § 55 MA-TA-20-1).

**Module Examination** (Prerequisite for the Award of Credit Points)

| LV-Nr. | Type and Duration of Proof of Performance <sup>70</sup>                                                | Determination of Module Grades | Comments                                             |
|--------|--------------------------------------------------------------------------------------------------------|--------------------------------|------------------------------------------------------|
|        | According to the module selected from the list of electives announced at the beginning of the semester | Module dependent               | The examination is determined by the selected module |

**Requirements for Admission to the Module Exam**

Module dependent

**Further Study-Related Feedback**

Module dependent

**Comments**

none

**Last Update:** 09.09.2025, Prof. Dr. Christian Uhl

The following are examples of module descriptions for compulsory elective subjects

In good time before the start of each semester, the degree program publishes a list of the modules offered in the compulsory elective area.

---

<sup>70</sup> Types of examinations according to: Allgemeiner Teil der SPO (§ 20a BA-TA-18-1; § 18a MA-TA-20-1).