

Internship Regulations of the Faculty of Mechanical Engineering for the bachelor's degree programmes in Mechanical Engineering, Industrial Engineering with a specialisation in Mechanical Engineering, Industrial Engineering with a specialisation in Electrical Engineering, and Chemical Engineering at Paderborn University

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1 Objectives of the internship

The internship, which is completed at a company, aims to provide the students with first-hand knowledge of the workings of company practice as well as to give them an insight into the organisation and working methods of industrial production.

Even before starting their studies, students are able to prepare for their studies during their internship. Future students are expected to become familiar with the basic techniques of mechanical engineering like manufacturing and processing raw, semi-finished and finished products during the internship. By doing this, they can orient themselves while planning their studies and choosing specialisations. An internship that takes place before the start of university studies is not just useful but necessary because it enables a deeper understanding of the courses in the early semesters. In addition, there is limited time available for internship related activities in the first few semesters, even during the semester breaks.

An integral aspect of the internship is to give the students experience of the social environment of the company's day to day workings. The students must acquaint themselves with the social structures within the company, in particular the relationship between managers and employees and thereby expand their social competence.

The internship (hereafter referred to as the pre-internship) must be completed prior to the start of the bachelor's degree programme. In cases where there is a justifiable cause, students can apply to the chairperson of the Examination Board (*Prüfungsausschuss*) for an extension. However, students can only register for the modules of the fourth semester after their internship is fully recognised by the Internship Office (*Praktikantenamt*).

The pre-internship is characterised by the integration of the intern into a working environment of skilled workers, master craftsmen and technicians with a predominantly executive role.

2 Timeframe of the pre-internship

The entire pre-internship for the bachelor's degree programme comprises 6 weeks. One internship week corresponds to five working days with the regular, standard working hours of the company. If more than 3 days are missed due to vacation, illness, or other reasons (e.g., public holidays, 'bridge' days, company vacations, exam dates, strikes, etc.), the working time must be made up accordingly. If necessary, the company should be asked for an extension of the internship so that the student can complete a section of the internship that has already begun.

University interns are not required to attend vocational school. In fact, voluntary participation in in-house classes is only possible if it does not impinge on the time spent at the workplace. Splitting the internship between up to two different companies is possible. The prescribed 6 weeks of internship activity are to be considered as a minimum. It is recommended that further internship activities in relevant companies be carried out on a voluntary basis.

3 Contents of the pre-internship

The pre-internship serves to give students practical experience in the fundamentals of working and processing materials as well as the functionally appropriate assembly of components in industrial production. The intern is expected to become familiar with various basic manufacturing processes and equipment under the guidance of professional supervisors.

Internship activities must meet the conditions listed below to be officially recognised as a pre-internship. Within the framework of these conditions, the division and chronological sequence of the activities can be freely arranged. Each field of activity has several examples listed alongside it. Students should, as far as possible, become acquainted with several of the following fields of activity in the company they

are training in before they start their studies. Suitable tasks are listed here as examples.

The pre-internship includes only the following areas of activity:

PI 1 Cutting processes:

Examples: Sawing, filing, drilling, threading, turning, planing, milling, grinding, etc.

PI 2 Forming processes:

Examples: Cold forming, bending, straightening, pressing, rolling, drawing, cutting, stamping, riveting, forging, etc.

PI 3 Primary forming processes:

Examples: Casting, sintering, plastic injection, etc.

PI 4 Joining and separating processes:

Examples: Soldering, welding, flame cutting, bonding, etc.

PI 5 Manufacturing, testing, measuring, assembly, and quality assurance procedures in the production process.

The following activity areas may only be taken for the degree Industrial Engineering with a specialisation in Electrical Engineering.

PI 6 Data processing and software development:

Examples: Programming, schematic design.

PI 7 Hardware development:

Examples: Circuit design, circuit layout, control cabinet design, etc.

Students of Mechanical Engineering, Chemical Engineering, and Industrial Engineering with a specialisation in Mechanical Engineering must show proof of a pre-internship in at least 3 of the 5 fields of activity PI 1 to PI 5, ranging from at least one week to a maximum of four weeks per field of activity.

Students of Industrial Engineering with a specialisation in Electrical Engineering must show proof of a pre-internship in the fields of activity PI 6 and PI 7, as well as in one of the 5 fields of activity PI 1 to PI 5, ranging from at least one week to a maximum of four weeks per field of activity.

4 Companies for the internship

The knowledge and experience to be gained in the pre-internship can be acquired primarily in medium-sized and large industrial companies as well as in companies that operate extensive technical facilities. To some degree, large manufacturing workshops may also be suitable. What are not suitable and therefore not permitted are small trade business and workshops related to the maintenance and service sector as well as institutes at universities.

In addition to fulfilling these criteria, the company should be recognised by the Chamber of Industry and Commerce as a training company (*Ausbildungsbetrieb*), and the internship activity must be supervised by a person entrusted with training management.

5 Reporting on internship activities

Activity reports must be kept for the entire duration of the internship activity and submitted to the Internship Office for application for recognition. The reports are to serve as practice in the presentation of technical facts and must therefore be self-written. Work processes, equipment, tools etc., may be described, and notes taken on experience gained during the activities carried out, provided that such information is not subject to the confidentiality regulations of the company concerned.

The reports must predominantly reflect the trainee's own activities, observations, and findings. General presentations without direct reference to the trainee's own activities (e.g., transcripts from technical knowledge books or other internship reports) will not be recognised. The student must aim for a concise and succinct writing style in keeping with the conventions of technical reporting. This is supported by pictorial representations in the form of the student's own sketches, workshop drawings, diagrams etc. The use of external material, brochures, etc. is not permitted.

In the pre-internship, the student must write a structured activity overview (presentation of the chronological structure and enumeration of the relevant activities) and an activity report on at least one self-performed activity spanning at least two and at most three A4 pages per week including pictures/illustrations.

The share of pictures/illustrations must not exceed 50% of the total content. The reports must be formatted keeping in mind the following guidelines. They must have a font size of 12pt with single line spacing. This results in approximately 2500 to 5000 characters in the activity report per week.

All the pages of the pre-internship activity reports are to be numbered consecutively and signed off on the last page by the person in charge of supervision at the company, with the name, date and company stamp.

To apply for recognition of internship activities, the original of this activity report must be submitted to the Internship Office for inspection and a copy must be handed in upon request.

Together with the activity report, a signed declaration must be submitted stating that the report has been prepared independently and is not derived, even in part, from other non-referenced sources.

6 Certification of internship activities

In order to apply for recognition of internship activities, in addition to the activity reports, an original certificate from the company regarding the performance of the

internship activity must be submitted to the Internship Office for inspection and a copy must be provided upon request.

The certificate must contain the following information:

- training company, department if applicable, location, sector
- surname, first name, date of birth and place of birth of the trainee
- start and end dates of the internship
- breakdown of activities by field of activity or type of activity according to Section 3 and respective duration
- explicit indication of the number of days absent, even if there were no absent days.

The wording of the certificate must clearly indicate that it refers to an internship activity, e.g., by the inclusion of a heading *Internship Certificate* or *Certificate of Internship* or an explicit statement that the student worked as an intern. The certificate may also include an evaluation of the activity and report card.

7 Recognition of the pre-internship

The recognition of the internship is carried out by the faculty representative working for the Internship Office. The student must apply for recognition in person and on campus during the office hours of the Internship Office. Proof of completion of the internship is required for recognition. Proof is provided by submitting the original internship certificate(s) and activity reports.

For first-year students, the completed internship certificates must be submitted to the Internship Office of the faculty in accordance with the regulations detailed in this document. This must be done by the end of the 1st semester at the latest to ensure verifiability. The date of receipt will be taken into account. After this deadline, the internship is generally no longer eligible for recognition.

For students of higher semesters as well, the completed internship certificates must be submitted to the Internship Office in accordance with the regulations detailed in this document. This must be done no later than 6 months after the end of the internship period in order to ensure verifiability. The date of receipt will be taken into account. After this deadline, the internship is generally no longer eligible for recognition.

8 Internships abroad

The performance of internship activities abroad is expressly recommended. However, they must comply with the regulations set out in this document in all respects.

In the case of an internship abroad, the report and the internship certificate may also be written in English. If the internship certificate is not written in either German, English or another language previously agreed upon with the Internship Office, a certified original translation must be attached.

Regulation for foreign students

Foreign students who have already started their studies in Paderborn are not allowed to complete any outstanding parts of the internship in their home country.

9 Alternative activities and exceptions

9.1 Accumulation of alternative activities

A maximum possible credit period is specified for each of the alternative activities listed below. In addition, for the alternative activities listed under 9.6 to 9.9, a sum total credit of up to 6 weeks cannot be exceeded.

9.2 Vocational training and professional employment

Relevant vocational training (apprenticeships) and practical professional activities are credited up to a duration of 6 weeks. The particulars are determined by corresponding decisions of the Examination Boards for Mechanical Engineering, Industrial Engineering and Chemical Engineering. The relevant certificates and, if applicable, the training plan that has been completed are required.

9.3 Gainful employment (student jobs)

Activities primarily aimed at earning a living, for which the company does not explicitly certify that an internship activity has been carried out (see Section 7), but which are nevertheless conducive to training as set out in these regulations, may be credited, provided that they are carried out in accordance with the guidelines mentioned in this document regarding contents of the internship and suitable companies. 40 hours will be counted as one week of internship. The students must obtain appropriate work certificates and activity reports as set out in this document, with a valid signature and stamp from the company.

9.4 Recognised internships at German universities

When students transfer from other German universities and have completed internship activities from their former university, this will be fully credited to the pre-internship if the following criteria are met. Students must be transferring from Mechanical Engineering, Industrial Engineering with a specialisation in Mechanical Engineering, Industrial Engineering with a specialisation in Electrical Engineering, or Chemical Engineering into the same course of study at Paderborn University. The internship activities must have been officially recognised by the Internship Office of their former university. The proof of recognition of the former university is required.

9.5 Other internships recognised at universities

Officially recognised internships in technical courses of study other than Mechanical Engineering, Industrial Engineering, and Chemical Engineering at German universities as well as in technical courses of study including Mechanical Engineering, Industrial Engineering, and Chemical Engineering at other German and foreign universities will be counted towards the pre-internship as long as they fully meet the requirements of the regulations set out in this document. In order for them

to be accepted, the student must submit corresponding proofs of recognition, company certificates where applicable, information on the underlying internship regulations, and reports.

9.6 Technical training in schools

Practical training periods in a school setting at technical high schools (*Fachgymnasien Technik*), technical colleges (*Technikerschulen*) and corresponding training centres, as well as in-company training periods while attending a vocational school (*Fachoberschule*), will be credited in full towards the pre-internship, insofar as they cover the areas of activity required here (see 3). 40 hours are counted as one internship week. Appropriate school certificates are required, as well as training plans from the schools, if applicable. Company internships during attendance at general education schools (*allgemeinbildender Schulen*) will not be considered.

9.7 Technical training and service in the German Armed Forces

Service activities in the German Armed Forces can be recognised if they were executed in the technical training series of the German Armed Forces. Periods of training and service in maintenance units corresponding at least to the level of Material Maintenance Level II (*Materialerhaltungsstufe II*) will be credited towards the pre-internship provided they cover the areas of activity required here (see 3). The student must submit appropriate General Activity Certificates (*Allgemeine Tätigkeitsnachweise* or *ATN-Bescheinigung*) or free-form certificates issued by the department, as well as internship reports maintained in accordance with these regulations and signed by the department. Issuing appropriate certificates and keeping internship reports are authorised by decree of the Federal Minister of Defense.

9.8 Technical Training in Federal Voluntary Service or Technical Year

Technical training in civilian service will be credited towards the pre-internship, provided that it is carried out in full compliance with these regulations (see 3). For the training to be recognised, the student will require a certificate for the training as well as reports kept in accordance with these regulations, with the signature of the appropriate authority from the training centre.

9.9 Technical training and further education in qualified technical courses

The German Armed Forces (*Bundeswehr*), offer technical training and further qualifications as part of their vocational training, which can be completed in one's free time. These courses are offered under the designation *Arbeitsgemeinschaften*. Equivalent courses are also offered by other institutions. Successful participation in such courses can be credited in full towards the pre-internship, provided they correspond to the areas of activity required here (see 3). If recognition of such courses is sought, prior clarification of eligibility for recognition with the Internship Office is recommended. For recognition, a certificate of successful participation from the provider is required, as well as reports kept in accordance with these regulations, with the signature of the training centre.

9.10 Exceptions

Students with disabilities can make special arrangements with the Internship Office (*Praktikantenamt*) or the Examination Board (*Prüfungsausschuss*).

10 Entry into force

These internship regulations will come into effect from the winter semester 2018/19 for all those students who study at the Faculty of Mechanical Engineering and who fall under the following examination regulations (*Prüfungsordnungen*): Mechanical Engineering V4 (Amtl. Mitteilungen 46.18 from 18.10.2018), Industrial Engineering V4 (Amtl. Mitteilungen 48.18 from 18.10.2018) and Chemical Engineering V3 (Amtl. Mitteilungen 47.18 from 18.10.2018).

These documents are issued based on the resolutions passed by the Faculty Councils of the Faculty of Mechanical Engineering on 01.08.2018, the Faculty of Electrical Engineering, Computer Science and Mathematics on 27.08.2018 and the Faculty of Economics on 14.09.2018.

Appendices:

Templates for the Internship Certificate

Certificate of Internship

This certificate is for bachelor's degree programmes in Mechanical Engineering, Industrial Engineering with a specialisation in Mechanical Engineering, and Chemical Engineering.

This is to certify that Ms/Mr, born on in has successfully participated in an internship from to

This includes days of absence.

*Days of absence include: holidays, sick days, public holidays, 'bridge' days, company vacations, exam dates, strikes, etc.

Training activities	Number of weeks
PI 1 Cutting processes: Examples: Sawing, filing, drilling, threading, turning, planing, milling, grinding, etc.	
PI 2 Forming processes: Examples: Cold forming, bending, straightening, pressing, rolling, drawing, cutting, stamping, riveting, forging, etc.	
PI 3 Primary forming processes: Examples: Casting, sintering, plastic injection, etc.	
PI 4 Joining and separating processes: Examples: Soldering, welding, flame cutting, bonding, etc.	
PI 5 Manufacturing, testing, measuring, assembly and quality assurance procedures in the production process.	
Total:	

The trainee's report booklet has been submitted, signed (with signature and company stamp) and returned in the original.

Company stamp/Date/Signature

Company:

Place:

Sector:

Certificate of Internship

This certificate is for the bachelor's degree programme in Industrial Engineering with a specialisation in Electrical Engineering.

This is to certify that Ms/Mr, born on in has successfully participated in an internship from to

This includes days of absence.

*Days of absence include: holidays, sick days, public holidays, 'bridge' days, company vacations, exam dates, strikes, etc.

Training activities	Number of weeks
PI 1 Cutting processes: Examples: Sawing, filing, drilling, threading, turning, planing, milling, grinding, etc.	
PI 2 Forming processes: Examples: Cold forming, bending, straightening, pressing, rolling, drawing, cutting, stamping, riveting, forging, etc.	
PI 3 Primary forming processes: Examples: Casting, sintering, plastic injection, etc.	
PI 4 Joining and separating processes: Examples: Soldering, welding, flame cutting, bonding, etc.	
PI 5 Manufacturing, testing, measuring, assembly and quality assurance procedures in the production process.	
PI 6 Data processing and software development: Examples: Programming, schematic design.	
PI 7 Hardware development: Examples: Circuit design, circuit layout, control cabinet design, etc.	
Total:	

The trainee's report booklet has been submitted, signed (with signature and company stamp) and returned in the original.

Company stamp/Date/Signature

Company:

Place:

Sector: