



**University of Stuttgart**  
Germany

# **Guidelines for Internships in M.Sc. Air Quality Control, Solid Waste and Waste Water Process Engineering (WASTE)**

*Final degree: Master of Science (M.Sc.)*

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## Purpose of an industrial internship

Practical work experience in business and industry is an important mean to help students successfully pursue their studies. The objective of an industrial internship is to learn about engineer's responsibilities and working methods in various areas.

Furthermore, an internship provides insight into the organizational structures of a company and the social aspects of the work atmosphere. The purpose of an internship is to complement academic learning and to enable students to apply and reinforce their theoretical knowledge in a practical setting, e.g. by taking part in a project. In this way, the trainees have the chance to get to know in-plant processes as well as production, development, planning, monitoring and controlling methods in any of the following fields: air quality control, solid waste and/or wastewater process engineering.

In view of today's great variety of engineering processes in the environmental sector and within the short timeframe of an internship, it is not possible to obtain in-depth information on all engineering activities. Therefore, the task of the student is to select within the offered topics a field of specialization. This experience also helps the student to clarify if the preferred specialization area meets the expectations of a future professional occupation and at the same time to recognize deficiencies that can be improved in due time.

Industries, small and middle-sized companies, engineering offices and public entities, e.g. ministries, government agencies, municipal entities as well as non-university research institutes are equally suitable to carry out an industrial internship.

## 1 Nature and duration of the industrial internship

### 1.1 Time requirements

The total length of the industrial internship is at least 6 weeks.

For the master study program WASTE, the industrial internship is optional and can be freely selected as elective module comprising 6 ECTS-credits.

An industrial internship is also possible within the two specialized areas counting for 6 ECTS-credits each. In this case, the student selects the industrial internship instead of the practical work (3 ECTS credits) and specialization elective module (3 ECTS credits) within the specific specialization. For the latter, the chosen internship must cover a topic related to the respective specialization area. This needs to be discussed with the head of the WASTE intership office. In case of dispute, the final descision will rest with a professor responsible for the respective specialization. The total length of this internship is at least 6 weeks per specialization.

After completion of the industrial internship, the student must write a report, which has to be evaluated by the respective examiner with the rating "successfully attended" or "unsuccessfully attended". The 6 ECTS-credits are acquired with a successful evaluation of the internship.

## 1.2 Approval and supervision

A member of the master's lecturer staff with examination competence (usually head of the WASTE internship office) must approve and support the respective internship. In cooperation with the WASTE internship office, the student agrees upon important issues, for example the contents of the internship, its plan, internship report, etc. This agreement will be documented on a form provided by the internship office.

Preferably, the student conducts the industrial internship during the third semester as recommended in the master's curriculum.

## 1.3 Content requirements

The aim of the industrial internship is twofold: to impart technological knowledge in the student's area of specialization and to show the student how to manage problems related to business organization. The student designs his/her individual industrial internship, covering at least two of the industrial internship sections (IIS) in **each** area. Each of these sections should cover between 1 and 3 (max. 4) weeks.

### **Technological area**

IIS 1: Experimentation and testing of environmental engineering equipment and facilities

IIS 2: Product and technology development

IIS 3: Adjustment and new development of processes and environmental engineering facilities

IIS 4: Measure and monitoring of environmental samples, e.g. water, soil, air.

IIS 5: Modelling and simulation of environmental and technical processes

### **Organizational area**

IIS 6: Planning and implementation of relevant environmental projects

IIS 7: Operation, maintenance, maintenance procedures of relevant environmental facilities inclusive their management

IIS 8: Environmental management

IIS 9: Municipal monitoring of facilities, occupational safety and health inspectorate

IIS 10: Design, planning and calculation of environmental facilities

IIS 11: Interdisciplinary project internship

**Internships at the University of Stuttgart are not possible.**

## 2 Interns in a host company

### 2.1 Suitability of the host company

During an internship, the student acquires practical knowledge about modern environmental engineering processes, studies efficient working methods, and is acquainted with the professional environment. This experience can only be imparted by medium sized (typically more than 30 staff members) and large industrial firms.

As a rule, industrial internships in higher education and research institutions as well as in the own or the parent's company are not allowed.

It is permitted to conduct the industrial internship both in Germany and abroad. The internship cannot solely be dedicated to administrative or routine jobs (e.g. positions as working student / Werkstudent or student assistant / Hiwi).

To settle whether a company is a suitable place to carry out an internship or if an exception applies, please contact the WASTE internship office in good time before the internship starts.

### 2.2 Application for an internship

Prior to the start of the internship, the prospective intern should read these guidelines or, for special cases, consult the WASTE internship office in order to thoroughly familiarize him- or herself with the rules for undertaking industrial internships and for writing activity reports, etc.

As internships are not arranged by the university, students themselves must approach the relevant companies and apply directly for an internship.

### 2.3 On-site conduct of interns

Throughout their internships, the students are without exception subject to the work conditions and regulations of the host company.

The interns are expected to display a willing attitude and to stand out for their helpful and collegial relationships with co-workers. The interns are supposed to positively contribute to a successful internship by showing interest and commitment and by making sure that they meet the specific training requirements.

### 2.4 Supervision of the interns

Interns are usually advised by an on-site supervisor providing them with hands-on learning experiences within the scope of the company's training resources and in accordance with the internship guidelines. The intern can seek the advice of the supervisor to discuss and resolve technical issues.

### 3 Legal and social status of the interns

#### 3.1 Internship contract

The internship is based on an internship contract between the company and the intern (or his/her legal guardian). The internship contract details the rights and duties of the intern and the company hosting the internship, as well as the nature and duration of the internship.

#### 3.2 Insurance coverage

Issues concerning the obligation to be insured are covered by the relevant legislation. More information can be requested from the health insurance funds and the institutions for statutory accident insurance and prevention.

During their internship, interns are insured for accidents through the insurer of the host company (i.e. the institution for statutory accident insurance and prevention).

Please note that no coverage is provided under the Student Health Insurance policy for students who are not enrolled.

#### 3.3 Compensation and grants

It is up to the host company how much they pay the intern as subsistence or training allowance. Since an industrial internship counts as training at the tertiary level, it is eligible for BAföG (i.e. financial aid). To apply for BAföG, interns must turn to the competent authority at their place of residence.

#### 3.4 Proof of work experience (Internship certificate)

At the end of the internship experience, the intern obtains an internship certificate from the host company detailing the duration of the practical training in each of the different departments (if the case applies), the specific tasks conducted as well as the number of absent days due to sickness and holidays.

#### 3.5 Holidays, sickness, absence

In case of work absence due to holidays, sickness, company holidays, short-time working, among other reasons must always be recorded. To this end, the intern should ask for an extension of his/her internship at the host company, as necessary to complete the internship section.

Public holidays do not count as days of absence.

## 4 Report on work experience

The intern must prepare a final report about her/his internship experience. The report must be written in German or English. The final report is only valid with the supervisor's signature and the stamp of the host company.

- Prepare an **introductory part**, briefly describing the company (branch of industry, size, range of products, etc.). Minimum 2 A4 pages.
- Prepare a brief **activity report** about each section of the internship, indicating the place of practical training and the main tasks or duties performed during the time of internship. Minimum half an A4 page per IIS.
- Prepare a **technical report** for each of the tasks that must be fulfilled during the internship, in order to describe the experiences made, e.g. along the development of a project, technical problems faced during commissioning, findings, etc. tasks. Minimum half an A4 page per week, excluding illustrations.

Another objective of the report is to practice the presentation of technical details. It is therefore essential that the student him- or herself conceives the reports. General presentations without immediate reference to the student's assignment or a mere reproduction of texts and drawings from technical books or use of brochures and company drawings are not accepted. All figures or text from other sources must be properly quoted and identified (list of references / literature).

The reports must be computer-generated. The required formatting (font, font size, etc.) is illustrated by the style sheet available on the website.

The full report is bound or presented in a folder, as well as signed and stamped at least once at the end of the internship by the supervisor. If the supervisor has no company stamp, a stamp of the Human Resources Department must confirm his /her signature.

## 5 Approval of work experience

The head of the WASTE internship office approves the internship, once the original report (see chapter 4) and the internship certificate (see section 3.4) are submitted. The student has a maximum of three months after the end of the internship to send these documents to the WASTE internship office.

Internships are not approved or only partially approved, if the internship reports are incomplete or poorly prepared, or if the activities substantially differ from the content or time requirements stipulated in these guidelines.

Activities undertaken to meet other exam requirements (e.g. student research project) cannot count towards internship activities.



## 6 Special terms

### 6.1 Work and vocational training

Appropriate work experience, such as vocational training, that meets the requirements of the internship guidelines can be taken into account to reduce the industrial internship (by up to 4 weeks). Depending on the activities undertaken to comply with the respective training plan, the head of the WASTE internship office will decide on the nature and duration of the approved internship.

### 6.2 Employment and working student jobs

The objective of a diverse internship experience is normally incompatible with the wish to earn money as a working student, because a meaningful internship is characterized by a frequent change of activities and not by the continuous execution of a single, easy-to-learn process step.

If internship compensation exceeds the usual level, the internship will be regarded as a working student job. In exceptional cases, working student jobs can be counted towards an industrial internship, reducing it by a maximum of 4 weeks, if the activities comply with the guidelines. For approval, it is necessary to submit a Certificate of Employment indicating the activities carried out, as well as properly prepared reports (see chapter 4).

### 6.3 Internship abroad

It is beneficial to the student's career, if he/she partially or completely undertakes the industrial internship in a foreign country. This way, future engineers will not only increase their professional expertise but also get an impression of the cultural, social and economic structure of other countries.

The internship can be taken in suitable companies outside Germany if the activities to be performed and the nature of the workplace meet the requirements of the internship guidelines. The reports must be compiled according to the given guidelines. Reports about an internship done in a foreign country may also be written in English. Upon prior consultation with the head of the WASTE internship office, the reports may also be prepared in the respective language. The certificates of attendance issued by the company need to be in English or German.

Internship placements abroad are arranged by DAAD (Deutscher Akademischer Austauschdienst, Kennedy-Allee 50, 53175 Bonn, phone: +49 (0) 228 8820, [www.daad.de](http://www.daad.de)) and IAESTE (University of Stuttgart, Keplerstr. 17, room 32, 70174 Stuttgart, phone: +49 (0) 711 68583051), among others.

## 7 Information on practical training activities

The WASTE Office provides information on appropriate internship schedules and can help you further to choose the host company, etc., especially if there are doubts on the approval of the intended internship.

## 8 Validity of the internship guidelines

The internship guidelines were developed following the regulations of the Internship Office for Mechanical Engineering and in collaboration with the study commission of the M.Sc. Air Quality Control, Solid Waste and Waste Water Process Engineering, WASTE of the University of Stuttgart.

These internship guidelines are in effect from 01.04.2017 for the above referred master's degree program (WASTE).

The current version of the guideline is available for perusal in the WASTE Office and can be downloaded from our website.