****

**T.R.**

**YTU FACULTY OF CHEMISTRY-METALLURGY**

**DEPARTMENT OF METALLURGICAL AND MATERIALS ENGINEERING**

**INTERNSHIP EXECUTION PRINCIPLES**

Contents

[1. OBJECTIVE AND SCOPE 1](#_Toc135144864)

[2. DEFINITION, SUBJECT AND DURATION 1](#_Toc135144865)

[2.1. Definition 1](#_Toc135144866)

[2.2. Internship Duration and Topics 2](#_Toc135144867)

[2.3. Time of Internship Works 2](#_Toc135144868)

[2.4. Internship Exemption for Oriented Students 2](#_Toc135144869)

[2.5. Prerequisite for Internship 2](#_Toc135144870)

[3. INTERNSHIP APPLICATION 2](#_Toc135144871)

[4. INTERNSHIP PROGRAMS 3](#_Toc135144872)

[4.1. Metallurgical Production Processes Internship 3](#_Toc135144873)

[4.1.1. Metallurgical Production Processes Internship Specific Principles 3](#_Toc135144874)

[4. 2. Forming Processes and Management Internship 4](#_Toc135144875)

[4.2.1. Forming Processes and Management Internship Special Principles 4](#_Toc135144876)

[4.3. Approval of the Internship Registration Form 5](#_Toc135144877)

[4.4. Submission of Internship Reports and Forms 5](#_Toc135144878)

[5. EVALUATION 5](#_Toc135144879)

[6. OTHER PROVISIONS 5](#_Toc135144880)

# 1. OBJECTIVE AND SCOPE

Students studying at the Department of Metallurgical and Materials Engineering do internships in accordance with the “YTU Undergraduate Education and Examination Regulations”. The internship is carried out in accordance with the framework directive determined by the Yıldız Technical University Senate. The objective of the internship is to provide students with an easy transition to working life, to demonstrate their professional practices, to increase their knowledge and skills, and to gain the experience required by the engineering profession. To this end; Undergraduate students who enroll in the 1st education by horizontal, vertical and internal transfer, do internship in institutions and organizations that serve in the field of Metallurgical and Materials Engineering as a part of education outside the education period. This directive covers the Department of Metallurgical and Materials Engineering.

# 2. DEFINITION, SUBJECT AND DURATION

## 2.1. Definition

Internship in the Department of Metallurgical and Materials Engineering is envisaged to reinforce the theoretical and applied knowledge received in Undergraduate Education and is a part of education. It is the application studies to be carried out in private and public workplaces in the country and abroad during the educating process.

## 2.2. Internship Duration and Topics

The internship is done in two terms, each of which is 20 (twenty) working days. They are carried out to cover, MSE3001 coded (Local Credits: 0 and ECTS: 3) Internship-1 "Metallurgical Production Processes" and MSE3002 coded (Local Credits: 0 and ECTS: 3) Internship-2 "Forming Processes and Management" topics.

## 2.3. Time of Internship Works

1. Internships can be done during academic holidays and day shifts, after the 4th semester. Only 1 internship can be done before the 6th semester.
2. All undergraduate students who have at least three free working days a week (the day the student does not have any courses in the weekly curriculum and **YTU Undergraduate Internship Practice Directive Articles 2.3 and 2.4**) can do their internship in the fall and spring semesters and summer school terms. Students cannot do internships on Sundays. Students continuing their theoretical education are required to complete the internship they started in the fall, spring and summer semesters in the same semester.
3. Five days a week in which the institution/organization where the student will carry out the internship operates are considered working days (Saturday and Sunday are also considered working days in workplaces where the student works as working days).
4. The student chooses the internship course from the automation system in the period he wants his internship to be evaluated. He submits his internship report and internship registration certificate to the department at the beginning of the relevant semester. Internship evaluation is evaluated as a grade to the automation system at the end of the relevant semester.
5. Internship course can be selected in summer school.

## 2.4. Internship Exemption for Oriented Students

Exemption procedures are carried out according to the **YTU Undergraduate Education Internship Application Directive**.

## 2.5. Prerequisite for Internship

It is recommended that the internships be done respectively as Internship-1 and Internship-2.

# 3. INTERNSHIP APPLICATION

The obligation to find an internship place that meets the conditions specified in the directive belongs to the student. Students who want to do internship should apply to the Department of Metallurgical and Materials Engineering. Students must fulfill the following procedures to apply for an internship:

* In accordance with the contents of Internship-1 (Metallurgical Production Processes Internship) and Internship-2 (Forming Processes and Management Internship), the company to which the internship will be held is found by the student.
* The student checks the list of companies announced for Internship-1 and Internship-2 on the department website for the suitability of the internship firm. If the company is on the list, forms are prepared without receiving a confirmation mail. If the company is not in this list, approval is received from the head of the internship commission or his assistant via e-mail regarding whether the company is suitable for the relevant internship. Afterwards, he/she applies by having the internship start documents (YTU SGK (Mandatory Internship) Form, Unemployment Fund Contribution to Internship Fees Information Form, Metallurgical and Materials Engineering Department Internship-1 and Internship-2 Approval Form approved by the company. It is sufficient to arrange the part about the internship type (1st page for Internship-1 (Metallurgical Production Processes Internship) and 2nd and 3rd pages for Internship-2 (Forming Processes and Management Internship). Internship approval must be obtained by e-mail.
* By filling out the YTU SGK (Mandatory Internship) Form, Unemployment Fund Contribution to Internship Fees Information Form, Metallurgical and Materials Engineering Department Internship-1 and Internship-2 Approval Form, General Health Insurance Statement and Commitment Form, Internship Registry Form and Metallurgical and Materials Engineering Department Internship Evaluation Form; it is sent to the department secretariat together with the photocopy of the identity card, the photograph, the printout of the e-mail and the calendar (the days of the internship will be circled in the calendar).
* YTU SGK (Mandatory Internship) Form is signed by the head of the internship commission or the co-heads of the department. The photographs in the YTU SGK (Mandatory Internship) Form and the Internship Registry forms are sealed by the faculty secretariat. The forms are delivered to the faculty internship unit.
* **“Internship Registration Form and Metallurgical and Materials Engineering Department Internship Evaluation Form”** is returned to the student whose documents are examined and approved by the Metallurgy and Materials Department Presidency. It is delivered by the student to the relevant unit at the workplace on the first day of the internship.
* **In case of internships abroad,** if the internship invitation letter prepared by the company is not in Turkish, the approved Turkish translation of the letter should be attached to the internship invitation letter. The internship report should be prepared in Turkish. Other principles will be the same as internships done in the country.
* **Long-term internships** can be counted towards any compulsory internship, depending on the student's request. However, at the beginning of the internship, the student must apply to the department with the **Compulsory Internship** application documents and these documents need to be approved by the department internship commission. In addition, the internship report and the delivery documents must be submitted to the department within a maximum of one month from the end of the internship. Applications made outside of the periods mentioned in this article will not be accepted.
* **On-campus internships** (Metallurgy and Materials Engineering Laboratories, Technopark companies on campus) are only accepted as voluntary internships, they will not be considered as compulsory internships. Only internships done at the Central Laboratory will be considered as compulsory internships.

# 4. INTERNSHIP PROGRAMS

## 4.1. Metallurgical Production Processes Internship

Production processes internship is performed in 20 business days, in integrated or semi-integrated facilities; in ore preparation, extraction processes, powder, fiber or prepreg production, casting, polymer production, ceramic production, glass production, recycling and primary material (ingots, raw materials of plastics, etc.).

### 4.1.1. Metallurgical Production Processes Internship Specific Principles

1. The company should be promoted. The name, title, address, work done, production capacity, general organization chart of the enterprise and all departments and units within this scheme, work areas, duties and functions should be examined.
2. It is necessary to show the flow charts of the stages of production in the workplace, from raw material to finished product, with examples, and therefore, the production should be examined.
3. Recognition of ore, preparation, enrichment processes, preparation of auxiliary raw materials and introduction of metal production stages and conversion flow charts from raw materials to products should be given.
4. The capacities, operating modes, operating parameters of the furnaces used in the processes, and the raw material processed in the furnace and the output product information should be given.
5. The characteristics of wastes from process and reassessment methods should be examined.

## 4. 2. Forming Processes and Management Internship

Forming processes and management internship are carried out in enterprises that apply at least one of the processes of casting part production, plastic forming, machining, powder metallurgy, coating, polymer, polymer composite, glass forming, ceramics, characterization, welding, heat treatment and non-destructive testing in 20 business days.

### 4.2.1. Forming Processes and Management Internship Special Principles

The company should be promoted. The name, title, address, work done, production capacity, general organization chart of the enterprise and all departments and units within this scheme, work areas, duties and functions should be examined.

**Forming Processes internship;**

1. **If the internship is done in a foundry**; the casting methods of the facility, the names of the casting parts and places of use, casting material and molding methods should be learned.
2. The parts of the foundry and what kind of activities/processes are carried out in each sector, the furnaces used in casting, the sands used in the molding room, model types, model materials and casting methods should be learned. If casting activities other than sand mold casting are carried out, the casting method and the process steps in the production of the part should be explained, the mold drawing and the technical drawings of the part should be exemplified.
3. **If the internship is done in a chipless forming facility**; the selection of process parameters such as force, work requirement, speed, friction and lubrication conditions should be examined. The cross-sectional picture of the products obtained by methods such as rolling, extrusion, rod and wire drawing, pipe manufacturing method and technical drawings of the tools used should be drawn by hand..
4. **If the internship is done in a facility that makes machining**; machining methods, benches and equipment should be defined, technical drawings of the manufactured parts should be drawn with tolerances and the order of operations should be written in detail. Machining parameters, selection reasons should be questioned and machining times should also be given.
5. **If the internship is done in a facility that produces by welding**; the applied joining methods and welding methods and the additional materials required for them, welding machines should be examined separately. The selection of welding method used in joining, its parameters should be specified, and the application stages should be explained separately.
6. **If the internship is carried out in a facility where heat treatment is performed**; types of existing annealing and heat treatment furnaces, capacities, powers, constructive structure should be examined, how heating and temperature control, refractories used, maintenance and repair conditions should be specified. The type of heat treatment applied to what kind of materials, for what purposes and the obtained properties should be examined.

If internship is carried out in fields such as powder metallurgy, plastic, glass, ceramics, as well as in research centers (DPT, TÜBİTAK, etc.), the student will prepare the internship report in a format similar to the above principles.

## 4.3. Approval of the Internship Registration Form

All the relevant places in the **Student's Internship Registration Form and Metallurgical and Materials Engineering Department Intern Evaluation Form** are by Metallurgical and Materials, Mechanical, Industrial and Chemical Engineers working in that workplace; The name-surname of the engineer, his position in the firm should be stated and signed and approved, and it should be sealed by the authorized unit of the workplace for internship. These forms can be hand-delivered to the student in a closed and sealed envelope, **subject to the principle of confidentiality**, and delivered to the Department Head.

## 4.4. Submission of Internship Reports and Forms

The signed and stamped **Internship Reports, which are filled in electronically, printed out, signed by the company representative and stamped, should be uploaded to the department internship system in pdf format**. Internship Registration Form, Metallurgical and Materials Engineering Department Internship-1 or Internship-2 Approval Form and Metallurgical and Materials Engineering Department Intern Evaluation Questionnaire (in a sealed envelope) will be submitted to the Metallurgical and Materials Engineering Department Chair, as of the end of the internship, must be delivered within one month at the latest. Internship documents of the student exceeding the specified period are accepted provided that the student has a legal excuse (health report, etc.) and documents it.

# 5. EVALUATION

Internship studies are evaluated by the **Internship Evaluation Commission by examining the Internship Registry Form, the Internship Evaluation Form of the Department of Metallurgical and Materials Engineering, the Internship-1 or Internship-2 Approval Form of the Department of Metallurgical and Materials Engineering, and the Internship Reports**. This assessment is carried out during the student's registration period.

# 6.BASIS

These principles have been prepared based on the Yıldız Technical University Internship Directive, which was published and accepted by the University Senate in the annex of its meeting dated 23.05.2023 and numbered 05-05, in accordance with Article 23 of Yıldız Technical University Associate and Undergraduate Education Regulation.

# 7. OTHER PROVISIONS

This directive is applied to Metallurgical and Materials Engineering students and the application is carried out by the department chair. All provisions that are not included in these internship execution principles are applied in accordance with YTU Undergraduate Education Internship Application Directive, YTU Chemistry-Metallurgy Faculty Internship Application Directive and YTU Associate and Undergraduate Education Regulations.