Handbook of
Internship

Boğaziçi University
Industrial Engineering Department

HANDBOOK OF INTERNSHIP

Contents

General Info

- All IE students must complete at least 60 workdays of internship during the 4-year undergraduate period. 60-workday internship is a requirement for graduation.
- At least 15 days of the 60 workdays should be production and at least 15 days of it should be information technology (IT) internship. The remaining 30 days is called free (general) type internship. Finance, marketing, etc. are accepted as "general internship". Production internship must be done after the completion of IT and general internships.
- The internship type is decided before starting the internship and internship report should be written accordingly. If students are not sure about the type of their work, they can decide with Internship Assistant, but in the end they need the consent of the Advisor responsible from internships.
- While submitting the internship reports to the department, the "Trainee Evaluation Form" (in a stamped and signed envelope) and the "Student Evaluation Letter" must be attached to the Internship Report.
- The law requires that all interns be insured during internship period against work related accidents and illnesses. The interns are insured by Boğaziçi University. The students should fill the "internship insurance form", which is available in the department secretariat and the department website. Students should hand this form in the department secretariat to be signed by the internship advisor. Afterwards, the form is approved by University Accounting Office (Hesap İşleri Şube Müdürlüğü). Students take the approved form from department secretariat and submit it to the company they would do their internship. If the company has its own internship insurance, this information should be indicated in the form.
- After the completion of the internship, the students are responsible for taking a signed document (different than Trainee Evaluation Form) from the company indicating that the student completed his/her internship during the dates stated in the internship insurance form. Students hand this form in University Accounting Office (Hesap İşleri Şube Müdürlüğü). Students also should leave a copy of this document to the IE department secretariat.

- Please look at your internship status on the list, which is periodically announced on the website. If there is any note included in your record, except "COMPLETED", contact the internship assistant as soon as possible.

Internship Rules

This chapter includes the rules of internship that is mandatory for Boğaziçi University Industrial Engineering students.

- Internships may be done during the summer or the semester break. Internships done during the semesters are not accepted. Students attending the summer school must pay attention to this point.
- Students generally start the internship after the completion of the 4th semester courses, which is also the recommended schedule. It is also possible to start after the completion of the 3rd semester courses (this is especially for irregular students).
- The number of minimum working days for an internship to be accepted is 15 days. In this period, it is not possible to change the workplace, department or the type of the internship. It is possible to do several types of internships in the same period only by the consent of the internship advisor.
- Production internship must to be done in a production facility under the supervision of an industrial engineer. During the internship, application of concepts learned in industrial engineering courses is essential. Please look at "Guidelines and suggested topics for IE Internship Activities" for typical production internship examples and further information.
- Information technology internship should be done in IT companies or IT departments of the companies. Please look at "Guidelines and suggested topics for IE Internship Activities" for typical IT internship examples and further information.
- Studies in a university environment cannot be considered as an internship.
- One third of the transfer students' previous internships workdays may be counted as free internship. However, at most 10 workdays of internship is accepted in this way.
- It is possible to do more than one internship in a company.
- Students can do their internships on abroad. IAESTE are AIESEC are important organizations that help students to find internship opportunities on abroad. All other rules are also valid for internships on abroad.

Guidelines and Suggested Topics for IE Internship Activities

Suggested analysis and inquiries for an internship on "Production" related topics

A production internship must be fulfilled in a manufacturing organization under the supervision of an IE. This internship must be completed after IT and general types of internships are completed. Even if the intern does not take place in manufacturing activities directly, she/he must apply contents of the production related courses offered in the BU IE department.

An intern should be working in one of the following areas for an acceptable internship in production: Process analysis, production planning/scheduling, production/project management, inventory management, ergonomics and human factors engineering, work study (methods study and work measurement), lean manufacturing and six sigma, quality control, business analysis, supply chain applications, usage of production related ERP modules (data entry is not accepted), product development and so on.

During the internship period, an intern may focus on the following types of analysis and questions. You do not have to answer all the questions in the list.

1. Provide an overview of the production system (what are the resources, inputs, and constraints?)
2. Provide a process chart of a major product and/or subassembly
3. Provide the routing for a group of products, along with manufacturing technologies used.
4. How the capacity of production is measured and calculated? What is the efficiency of the production processes?
5. How can you categorize production processes in the internship organization? Are they continuous, discrete, job shop, flow shop, project shop, MTO, ATO, a combination of these, etc.?
6. Provide the layout of the internship organization. How can you categorize the layout of the organization? (Process layout, product layout, cellular, etc.)
    a. Describe the material handling system used
    b. Describe the warehousing system used
    c. Discuss the effectiveness of the existing layout together with the material handling and warehousing systems
7. Discuss the forecasting activities in the company, purposes of forecasting, and the forecasting methods that the company uses. What are the sources of data? What sort of mathematical models are used? What is the computer support in forecasting activities?
8. Production planning activities
    a. Who makes decisions on what and how much to produce?
    b. How are these decisions made?
    c. How can these decisions be improved?
    d. How the company allocates resources (key personnel, capital, land, material, supplies, etc.) for production planning activities?
    e. Is there ERP software used in the company?
9. Inventory planning activities
    a. Define major items of inventory by their function.
    b. What are the reasons for holding inventories?
    c. What would happen if inventories are not carried?
    d. What types of inventory control policies are used?
10. Resource allocation and detailed scheduling activities
    a. Explain the detailed scheduling activities?
    b. What sort of decision aids (computerized or otherwise) are used for detailed scheduling?
    c. What are the performance measures used for detailed scheduling and short term resource allocation?
11. Discuss planning activities for inbound and outbound logistics in the company
12. Discuss manufacturing technologies (JIT, CIM, FMS, GT, CAD/CAM) used in the company
13. Ergonomics and Human Factors related activities
    a. Explain how ergonomics related issues are identified
    b. Describe what types of ergonomics approaches are used to solve the issues
    c. Describe some of the implemented ergonomics solutions
    d. Describe productivity and safety and health related benefits
    e. What types of software and tools are used?
    f. Provide a case study or studies for ergonomic work/workstation and so on analysis

14. Work study related activities
    a. Explain method study and operation analysis approaches used in the company
    b. Describe what and how the problem solving tools are used
    c. Describe work measurement procedures and approaches.
    d. Describe the improvements and benefits of work study activities for the company
    e. What types of software and tools are used?
    f. Provide case studies for both work method improvement and work measurement
15. Lean Manufacturing and Six Sigma Related Activities
    a. Describe lean manufacturing and six sigma related activities
16. Quality planning and control activities
    a. Explain how the internship organization defines quality for a chosen group of products
    b. Describe the quality control activities throughout the life cycle of that product group
    c. Describe preventive quality assurance activities in the internship organization
    d. Describe statistical quality control activities in the internship organization

Suggested analysis and inquiries for an internship on "IT" related topics

An Information Technologies (IT) internship must be fulfilled in an IT department of a preferably large service or manufacturing organization, or in a company whose main function is to provide IT service. An intern should be working in one of the following areas for an acceptable internship in IT: Network setup and management, system setup, database preparation, hardware operations, web design, information ergonomics, software ergonomics, human-computer interaction, program coding and so on. Internships including Microsoft Access or Project application are accepted as IT internship only if the job is not data entry. Depending on the internship organization, an e-commerce type project will be regarded as either an IT internship of General internship.

During the internship period, an intern may focus on the following types of analysis and questions. You do not have to answer all the questions in the list.

1. What are typical IT related decisions made and what are their relevance to company activities?
2. How IT activities support management decisions and planning?
3. Which IT activities (hardware and software related) support strategic, tactical, and operational level decisions?
4. Please provide a detailed description of the IT hardware and software infrastructure in the internship organization (network, workstations, computers, operating system, major application programs, etc.)
5. What are the major data types recorded and processed?
6. Describe user experience related issues of the software and web design
7. Describe the way information is designed
8. Name a few application programs for enterprise wide applications: ERP, stock keeping, accounting, etc. Discuss the level of decisions supported by these applications. Give an example of what is performed based on that specific software.

Suggested analysis and inquiries for an internship on "General IE" related topics

In a "General IE" internship, you are expected to work in a service industry, such as healthcare, finance, transportation, communication, consulting, tourism administration, marketing, investment planning, operations planning, project management, human resources, human factors, occupational safety and health. An extended internship duration in "Production" or "IT" will also count towards your General IE internship.

Students can also work in a governmental or non-governmental organization (NGO) for their General IE internship, where industrial engineering tools and techniques mentioned in the guidelines above would apply. Typical examples (not an exhaustive list) of NGO's that would be suitable for IE internships are Kızılay, KALDER, Türkiye Eğitim Gönüllüleri Vakfı. Students who wish to do internship at an NGO are required to get verbal permission from the department's internship coordinator.

Rules for Internship Reports and Submission:

1. Internship reports should be prepared as indicated in the "Outline for Internship Report". If you have any question about the report, you can ask to internship assistant before submission.
2. Internship reports have to be written in English. It is suitable to include some tables, graphs, etc. in the report. If this information from the company is in Turkish, it is not necessary to translate to English.
3. Reports of the different internships at the same company may be written in the same report. However, internships at different companies should be written in separate reports.
4. Internship reports must be at most 20 pages except appendices.
5. The internship report need not to be signed by the person in charge of the internship.
6. Internship reports must be submitted within 21 days after the beginning of the following semester.
7. While submitting the internship reports there are two other documents that have to be submitted to the internship assistant:

   Trainee Evaluation Form (Staj Sicil Formu): This form can be acquired from Dean's secretary. The form includes two pages. The first page is an official document signed by Dean that shows the internship is mandatory. The second page includes evaluation questions about the intern. The department head fills this page. Please be sure that the form is signed and stamped. This form must be handed to internship assistant in a closed, stamped and signed envelope. The department head may also send this form by mail but the students are responsible for ensuring that the mail is received by the internship assistant.

   Student Evaluation Letter: This letter can be acquired from website. It includes comments of the students about the internship. The reason for this document is to provide an insight about the company for the prospective students. The intern is expected to state both positive and negative aspects of the internship. It is not necessary for this document to be signed or seen by the company.

8. In addition to the trainee evaluation form and student evaluation letter, the students hand a document in the University Accounting Office to inform them

that the internship is completed. A copy of this document should be submitted to the department's secretary.
9. Students must submit the internship report and the other two documents to the internship assistant before the internship report submission deadline. While submitting, students must sign a document showing that they submitted the report and all other documents on that day, and indicate their e-mail addresses. In case of any incomplete material, internship assistant records these to the "Internship Document Status Page". The submission is not considered as completed until the submission of all the missing documents.
10. A day is subtracted from the total workdays for each late day the submission of the internship report or any other document after deadline.

Outline for Internship Report

1. Cover Page

Cover page should display: Student name and ID number, internship start and finish dates, number of internship days, type of internship (Production, IT, or General), company/institution name.

2. A Brief Executive Summary of the Internship

A one-page summary of the company/institution and a short account of the major activities carried out during the internship period.

3. Table of Contents

Contents of the report with page numbers, list of tables, and list of figures.

4. A Timetable of Internship Activities (available on the website)

A timetable where each row in the table corresponding to a day in internship period. Each row should record the date, internship activity (of Section 6) on that date, and the page number in the report.

5. Description of the company/institution

This section should answer the following questions:

5.1. What is the full title of the company/institution? Give a brief history of the company, full mailing address, and relevant web links.
5.2. What is the type of ownership of the company/institution? State the main shareholders and their shares.
5.3. What is the sector that the company/institution operates in? Specify the products and services produced and offered to its customers.
5.4. Who are regarded as the customers of your internship company/institution (consider the end users, retailers, other manufacturers, employees, etc.)?
5.5. Provide an organization chart of the company, along with information on the number of employees.
5.6. Provide a list of functions performed by the industrial engineers in the internship organization.

6. Internship activities

This is the main body of your report. You should present the activities performed during the internship period. Please refer to **"Guidelines and suggested topics for IE Internship Activities"** document for the types of analysis and inquiries that you should be performing during "Production", "IT" and "General" internship.

7. An assessment of the internship

In this section you should answer the following questions
7.1. What skills and qualifications you think that you have gained from the internship?
7.2. What kind of responsibilities you have undertaken during the internship period?
7.3. How do you think the internship will influence your future career plans?
7.4. How do you think the internship activities that you carried out are correlated with your classroom knowledge?

8. Conclusions of the report

This section should include:

- A summary of key conclusions derived from the internship experience.
- General observations about the sector in which your internship company/institution operates

9. Appendices and supplementary material (charts, graphs, pictures, computer codes, etc.)

10. References