



**YAŞAR UNIVERSITY**  
**FACULTY OF ENGINEERING**  
**DEPARTMENT OF INDUSTRIAL ENGINEERING**  
***ENDÜSTRİ MÜHENDİSLİĞİ BÖLÜMÜ***

Selçuk Yaşar Kampüs, Üniversite Caddesi, No:37-39, Ağaçlı Yol, Bornova, İzmir, 35100

Phone: +90-232-570 7070

Fax: 90-232-570 7000

**INTERNSHIP BOOKLET | *STAJ KILAVUZU***

## Table of Contents

<b>1. INTRODUCTION</b> .....	3
<b>3. GUIDELINE FOR INTERNSHIP (IE 4811)</b> .....	4
<b>3.1. Company Selection Procedure</b> .....	4
<b>3.2. Application Procedure</b> .....	4
<b>3.3. Instructions for Preparing the Internship Report</b> .....	4
<b>3.4. Evaluation of Internship Reports</b> .....	5
<b>3.5. Tasks</b> .....	6
<b>3.6. Industrial Engineering Problem</b> .....	7
<b>4. CONCLUSION</b> .....	9

## 1. INTRODUCTION

This booklet is prepared to guide the junior students during their internship. The minimum time required for Internship (IE 4811) is 30 working days.

The internship period must be uninterrupted for IE 4811. If the company operates on public and religious holidays, these will also be considered as working days as long as necessary documents are provided. The final exam period and the summer school must not overlap with the internship period. The internship should end before the start of lectures for the following semester.

In internship, students are expected to **observe, describe** and **report** some systems phenomena covering Organizational Concepts, Production Systems Design, Production Planning and Control Systems, and Information Systems. In addition, during internship, each student should identify, formulate and find a satisfactory solution to an **Industrial Engineering problem** of the organization

Section 2 includes the guidelines for IE 4811 (Internship) as well as the instructions for identifying and solving the Industrial Engineering Problem. At the end of the booklet, a brief conclusion is made.

Including this booklet, all the necessary forms and details regarding to the internship courses are available on our department webpage: <http://ie.yasar.edu.tr/stajlar/>

## 2. GUIDELINE FOR INTERNSHIP (IE 4811)

### 2.1. Company Selection Procedure

The students are encouraged to find and propose alternative companies to be approved by the Department for internship. The following criteria should be satisfied in the selection of a company:

1. Manufacturing or service companies are acceptable. However, when selecting a service- sector company, students make sure that they will be able to observe all processes in order to fulfill their duties.
2. The company should satisfy **at least** one of the following criteria:
  - a. at least **one industrial engineer** must be employed,
  - b. at least **three engineers** must be employed,
  - c. at least **15 white-collar personnel** should work in the organization.
3. The company **will be functioning actively** (not on a break due to maintenance, economic crisis, etc.) during the period of the internship.
4. If a student fails from Internship, it is not allowed to conduct the repeated internship in the same company.

The internship committee will get into touch with the students by telephone during internship period. Randomly selected 10% of the students will be visited by internship committee within the internship period.

### 2.2. Application Procedure

The subsequent steps should be followed for internship.

**Step 1.** Students should download the *Company Proposal Form* from the department internship web page (<https://ie.yasar.edu.tr/en/internships/>). After collecting the relevant information and filling out the form, students should get submit the form to the Internship Committee and get their approval and signature.

**Step 2.** Students should log into the Internship website at [www.staj.yasar.edu.tr](http://www.staj.yasar.edu.tr) and provide the relevant information in the *Letter of Application Form*.

**Step 3.** After receiving the approval of the Internship Committee, students will print the *Letter of Application Form* through the Internship website at [www.staj.yasar.edu.tr](http://www.staj.yasar.edu.tr). The *Letter of Application* should be submitted to the companies by the students and required fields of this form must be filled out by companies.

**Step 4.** After receiving the filled out forms from the companies, students should submit their filled and approved *Company Proposal Form* and *Letter of Application* form the Internship Committee through the same website [www.staj.yasar.edu.tr](http://www.staj.yasar.edu.tr). *Letter of Application* form will be evaluated by internship committee and then will be forwarded to the Human Resources department of Yaşar University in order to start the process for their health insurance premiums which will be paid by the university.

### 2.3. Instructions for Preparing the Internship Report

1. The report must be written in English and printed. It should be free of spelling, typing and grammar errors. The use of spell/grammar checkers and online dictionaries is recommended.
2. Style, format, organization and content of the report are important issues to be considered in evaluation and grading. You should use, as a general rule, Times New Roman font of size 12 and 1.5 space between lines.

3. The main headings must be numbered and written in capital letters whereas subtitles must be written in small letters (initial letters being in capitals). All pages should be given page numbers. Figures, drawings, charts, tables, etc. should be numbered, captioned and put in Appendices only if they are not of ultimate importance. They should be referred in the report wherever appropriate using their corresponding numbers.
4. Students are not allowed to borrow others' material directly without citation (otherwise, it is plagiarism) and they should not use unnecessary "filler" material compiled from internet or other sources.
5. The report should consist of the following sections:
  - Title Page**
  - Statement of Plagiarism**
  - Table of Contents** (with corresponding page numbers)
  - Introduction**
  - Tasks** (not in Q&A style)
  - Industrial Engineering Problem**
  - Conclusion**
  - References**
  - Appendices**
6. The report should be **at most 25 pages**, excluding Appendices.
7. IE 4811 reports should be submitted no later than the last day of the registration period for the following semester. The report must be binded transparently to indicate the cover page. In addition a softcopy of the report in CD must be attached to the last page of the report.

## **2.4. Evaluation of Internship Reports**

The overall assessment of the student's Internship is based on the evaluation of Internship Report and the *Internship Log Book*.

The Internship Log Book is examined prior to acceptance for evaluation of the student's written Internship Report. If it is found to be inadequate in student performance or program coverage, then the Internship is regarded as Unsatisfactory and will have to be repeated.

The evaluation of Internship Reports will be done on a pass/fail basis. If the report is found to be Satisfactory, the student passes. If the report is determined to be Unsatisfactory, the student fails and student will have to repeat the Internship at his/her earliest convenience. When the report is evaluated as requiring some admissible revisions, during pre-processing, it will be returned back to the student for revision and/or rewriting in a limited duration. The completed report will be evaluated by the same grader. The details of evaluation process will be announced later in the course webpage.

The evaluation of the reports is based on the following criteria:

- Style, format and organization of the report
- Command of English
- Accomplishment of tasks
- Definition, modeling and solution of the IE Problem

The details of grading are shown in "*Internship Report Grading Form*" (available in the course's web site). Students will be allowed to examine the details of their grading. The students have the right of objecting to their final grades but the objection must be done within the 5 day period starting with the

announcement of final grades. In case of objections, the Internship Committee is the ultimate decision maker about the re-evaluation procedure and determination of the final grade.

The evaluation results will be declared in midterm week of semester. The reports that need to be revised will be submitted to the students. The students should revise the reports within two weeks. Final evaluation results will be declared two weeks later than the second submission of the reports.

## **2.5. Tasks**

The IE 4811 Internship report for the students of the Department of Industrial Engineering should be prepared by providing information about the below tasks. Furthermore, an industrial engineering problem must be identified, formulated and solved as described in Section 2.6.

**Task1:** The following information about the company should be provided:

- Full title
- Address
- Brief history
- Employment data (Number of workers, technical and administrative staff, etc.)
- Approximate annual sales (including exports), market share, and competitors
- Main products or services

**Task2:** Describe how the management functions (such as Planning, Organizing, Staffing, Directing, and Controlling) are performed in the company.

**Task3:** Discuss the organizational structure of the company referring to the organizational chart (if it is not available, prepare it yourself).

**Task4:** Explain briefly the types of manufacturing processes that exist in the plant. *If the company is in a service system*; explain briefly the types of service processes that exist in the facility.

**Task5:** Is there any Operations Planning and Control Department in the facility? If yes, what are the responsibilities of this department? If no, who is responsible from the duties of this department and how do they perform these activities?

**Task6:** For an assembly or subassembly prepare an assembly process chart. If an assembly does not exist, provide a process chart for a specific part or product. *If the company is in a service system*; provide a process chart for a specific service.

**Task7:** What are the special hazards associated with the operations in the facility? Are there any special national organizations, rules and regulations associated with the control of these hazards? If so, describe them. What are the precautions applied for safety? Explain.

**Task8:** Which factors were taken into account when it was decided to locate the facility at the present location? Explain each and discuss their appropriateness. Is the firm planning to add new facilities to the existing one(s)? Which factors do they consider?

**Task9:** Does the company have a quality control/ quality management department? If no, explain who is responsible and how do they handle the quality-related problems. If yes, what is the prime responsibility of the department? What techniques are they using for Quality Control? Do they apply any Quality Management System(s)?

**Task10:** Describe the information flow between existing departments of the company in detail. What type of information is transferred to which department(s) and from where? What is the information

flow media (for example, do they use computers for this purpose) through the departments? Add some examples of the forms used for information flow and explain their functions.

## **2.6. Industrial Engineering Problem**

An Industrial Engineering (IE) problem could be related with:

- Facility location,
- Facility layout,
- Material handling,
- Cost accounting,
- Financial decision making,
- Work study,
- Ergonomics,
- Demand forecasting,
- Production planning,
- Capacity planning,
- Human resources management,
- Inventory management,
- Scheduling,
- Quality management,
- Product design,
- Process planning,
- Distribution logistics,
- Maintenance planning,
- Information systems,
- Customer requirements planning,
- Purchasing,
- Marketing,
- Strategic planning, etc.

Industrial Engineering Problem part of your report should include the following subsections:

### **DEFINE: Problem Identification and Definition**

This first step is critical. It is essential for the student to have a clear understanding of the problem as a whole. A good way to define the problem is to write down a concise statement which summarizes the problem and its environment, the current status and finally write down the goals, where you want to be after the problem has been resolved.

It is essential to develop an objective statement which clearly describes the current condition you and your company wishes to change. Make sure the problem is limited in scope so that it is small enough to realistically tackle and solve. Writing the statement will ensure that everyone can understand exactly what the problem is. It is important to avoid including any “implied cause” or “implied solution” in the problem statement. Remember, a problem well stated is a problem half solved.

## **MEASURE: Identification of Key Input and Output Variables and Data Collection**

In this stage of problem solving, questions should be asked and in return data and information are gathered. The objective is to get as much information about the problem as possible and understand the current state. This involves determining Key Process Input Variables and the Key Process Output Variables, what information is critical and how best to obtain it. It often requires making tradeoffs between the types of information and the level of detail and making judgments about the value of the information relative to the level of effort and cost required to obtain it. Do not make the mistake of assuming you know what is causing the problem without an effort to fully investigate the problem environment you have defined. Try to view the problem from a variety of viewpoints, be an open minded. Investigate how the issue under consideration affects others. It is essential to spend enough time researching the problem.

## **ANALYZE: Analyze Collected Data**

In this step, the goal is to use the data from the previous (Measure) Step to begin to determine and understand the causes behind the problem. Among the possible questions to be asked when analyzing the problem are listed below.

- What is the history of the problem? How long has it existed?
- How serious is the problem?
- What are the causes of the problem?
- What are the effects of the problem?
- What are the symptoms of the problem?
- What methods does the company already have for dealing with the problem?
- What are the limitations of those methods?
- Can the problem be divided into sub problems?

## **IMPROVE: Problem Formulation, Solution Approach, Evaluation and Selection of Solution(s)**

In this step, the problem should be either represented by a model; analytical (mathematical programming-LP, IP, MIP, DP, NLP, differential equations, stochastic processes, decision trees, statistics, queuing models, etc.) or numerical (simulation, statistical models, etc.), or should be technically defined using IE techniques/tools such as 5S, Statistical Quality Control Techniques. After problem formulation, solution methodology should be clearly explained. It is usually required to apply a mixed combination of tools with which you are equipped in IE courses to generate and compare solution alternatives.

Developing a set of evaluation criteria and performance metrics are required for comparing alternative solutions. Realizing that this is not an easy step including trade-offs and sacrifices, the criteria usually need to be prioritized, either implicitly or explicitly, depending on different (operator, manager, executive, environment, society, etc.) perspectives.

## **CONTROL: Conclusion**

In this step, the solution of the problem and your conclusions should be presented. The improved process/ the solved problem has to be handed off to the process/ problem owner along with a plan of how the solution can be implemented. The goal is to ensure that the gains from the project will be implemented.



### **3. CONCLUSION**

This booklet provides an overview of the Internship process and the guidelines for the students. Several activities are involved within the Internship such as the observation of the system(s), data collection, and system analysis (based on the current theories and models). Therefore, students will have the opportunity of applying their knowledge and skills gained through the courses on real-life systems. Based on their observations and analyses, students are expected to fulfill their Internship requirements, which are stated in the form of tasks. Finally, students are expected to express their work in an appropriate report format. The report template can be reached from the web site (ie.yasar.edu.tr)