

OSTİM TECHNICAL UNIVERSITY FACULTY OF ENGINEERING

WORKPLACE TRAINING / PRACTICE / EXPERIENCE REPORT

DEPARTMENT OF MATERIALS SCIENCE AND ENGINEERING

NAME AND SURNAME

YEAR

**FACULTY OF ENGINEERING WORKPLACE TRAINING / PRACTICE / EXPERIENCE 20…/ 20… ACADEMIC YEAR …….. SEMESTER REPORT**

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| **STUDENT INFORMATION** |
| **Student's Name and Surname** |  |
| **Place and Year of Birth** |  |
| **Faculty Number** |  |
| **Department** |  |
| **Course code** |  |
| **Phone number** |  |
| **E-mail address** |  |

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| **BUSINESS / COMPANY INFORMATION** |
| **Name** |  |
| **Address** |  |
| **Production / Service Area** |  |
| **Phone number** |  |
| **E-mail address** |  |

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| **WORKPLACE SPONSOR INFORMATION** |
| **Name and surname** |  |
| **Position / Title** |  |
| **Phone number** |  |
| **E-mail address** |  |

**REPORT WRITING RULES**

1. Reports should be written only on one side of the paper using a computer. Times New Roman (12) font should be used.
2. While writing inside the tables, maximum 12 and minimum 8 font size can be used. Font sizes other than these values ​​should not be used.
3. There should be a one-stroke break after the comma and the period.
4. 2.5 cm margins should be left at the top and left edges of each page, and 2.5 cm at the bottom and right edges.
5. To center the text part of the page after binding; texts should be centered according to the written block. In report writing, all lines should start from the end of the left margin and the text should be justified on both sides. Single line spacing should be used in the text.
6. Single line spacing should be used for explanations of figures and tables, citations, footnotes and reference list.
7. The Report will consist of the following sections:

a. Information Form (See page 2)

b. Questions to be answered section (Business General Information, questions according to course codes should be answered in order. The questions are given starting on the 4rd page.)

c. Conclusion Section

d. Annexes Section (Additional data, tables, figures, graphics, technical drawings, photographs, brochures, etc. documents specified in the report, if any, will be added in this section.)

e. The report book shall not exceed a maximum of 100 pages.

1. After filling out the information form, students will start answering the questions one by one. The sample page for the question answering page is given in Appendix 1. Students may reproduce this page as many times as necessary.

**BUSINESS GENERAL INFORMATION**

1. Give information about the name of the business, the subject of work, the place of establishment and its short history.
2. Type of business (incorporated, limited, ...) Give information about the resources and capital structure of the business.
3. Give information about the capital of the enterprise, production capacity, annual sales amounts and number of employees.
4. Give information about the product types of the enterprise and the annual production amount, market price etc. of these products.
5. Indicate the number of Materials scientist and Engineers in the enterprise, their names, and which position they are assigned to.
6. By drawing the organizational chart of the business, show which units constitute the production and all other business functions, relation between units, authorities and responsibilities.

**QUESTIONS REGARDING WED 124 COURSE (1st YEAR 2nd SEMESTER)**

Show on the organizational chart which units carry out general business functions. (General business functions: Management, Production, Marketing, Finance, Accounting, Personnel, Research & Development, Public Relations)

1. Briefly explain the authorities and responsibilities of the employees in the management levels in the enterprise.
2. What are the materials science and engineering activities carried out in the company? What tasks do materials science and engineers perform?
3. Give an example by specifying the planning activities and the forms used in the period from order taking to the start of production.
4. Draw the layout of your internship place. Those who work in production enterprises should draw at least one of the general layout of the enterprise, while those who work in service enterprises should draw the office layout.
5. Give information about the inputs (raw materials, materials, labor, energy, machinery/equipment, software/hardware, etc.) required for production in the company. If you are working in a service business, please provide information about the inputs (computer program, workforce, energy, machine, standards, etc.) of the products (for example, software) in the field of activity of the company.
6. Explain the production processes of at least 3 and at most 10 of the products produced in the enterprise.
7. Draw the technical picture of one of the basic products produced by the company using a computer program. Keep the drawing file to be shown to your advisor if requested.
8. Are there any occupational safety and worker health practices applied in the enterprise? Evaluate the company in terms of occupational safety and worker health, taking into account the factors of heating, ventilation, lighting and noise. If there is a standard (ISO 45001) in the company for occupational safety and worker health, please provide information. Give information about the types and causes of occupational accidents in the enterprise.
9. Give information about the machinery/workbench/equipment used in production systems, software/hardware/equipment used for service systems. Give information about the purposes and technologies of the machines used.
10. Indicate how the information flow between the units in the enterprise is ensured and how the obtained information is reflected in the decision-making processes.
11. Give and draw examples of documents such as forms, reports, work orders, purchase receipts, invoices, and malfunction reports used in the company where you do your internship. Fill in the information that should be on these documents. Provide information about the company's personnel selection, job familiarization, in-house training, job promotion activities. Prepare at least five “Task Descriptions” from various management levels.
12. Make the charts of shift work. Write down the suggestions, thoughts and your suggestions on the types and models of shifts of the employees in the enterprise.
13. What are the material handling tools and methods used? Discuss the suitability of material handling vehicles and methods in terms of efficiency and, if any, alternative transportation vehicles and methods.
14. Give information about the applied "maintenance/repair systems" (measuring instruments and devices used, maintenance personnel, maintenance times). Explain the activities and information flow to correct the fault in the event of a fault. Evaluate the efficiency of the process followed for maintenance-repair in terms of time spent.
15. Give information about the computer programs and applications used.
16. Discuss the improvement aspects of the current production/service process.
17. Are computer programming activities carried out in the enterprise? If yes, please provide information about the programming language and database architecture used.
18. Did you take an active part in the company? Did you take part in solving any problem? Have you been involved in any project?

**QUESTIONS REGARDING WAP 225 COURSE (2nd CLASS 1st SEMESTER)**

1. If your company is different from the previous company, answer questions 1, 3, 4, 7, 10 from the questions of the WED 124 course.
2. Give information about the production methods used (casting, machining, metallurgical transformations, shaping of metals, welding, soldering, wiring, printed circuit design and production, joining and assembly, etc.). For a product or a part, create a process diagram showing all the activities in the process from the raw material/intermediate product entering the business/workshop to its production. If you think that some changes can be made to improve the current process, discuss how you can achieve this. (Consider the length of transport routes, processing times, transaction priorities, transport vehicles, transport lot quantities, etc.)
3. What are the materials used in the company's products? Explain the basic properties of these materials, the reasons for preference and the standards, if any.
4. Evaluate at least one of the activities carried out in the company from an economic point of view.

**QUESTIONS REGARDING WAP 226 COURSE (2nd CLASS 2nd SEMESTER)**

1. If your company is different from the previous company, answer the questions 1, 3, 4, 7, 10 of the WED 124 course and the questions 2, 3, 4 of the WAP 225 course.
2. Inform and evaluate the software used in the design/production or service processes of the company.
3. Give information about soldering, wiring, circuit/board/system design, measuring using basic measuring tools, operating materials science and engineering tools used in the company.
4. Does the firm use a method to calculate the cost of its products or services? Give information about the methods used. Discuss and report the effect of the changes in the parameters in the accounting system on the cost of the product or service with your company patron.
5. Discuss the ways in which the current production/service process could be improved.
6. Did you take an active part in the company? Did you take part in solving any problem? Have you been involved in any project?

**QUESTIONS REGARDING WAP 325 COURSE (3rd GRADE 1ST SEMESTER)**

1. If your company is different from the previous company, answer questions 1, 3, 4, 7, 10 of WED 124, question 2 of WAP 225, and question 3 of WAP 226.
2. Evaluate by explaining the company's service or production system. Shape the established system design and discuss the areas that need improvement.
3. Does the firm engage in activities such as borrowing and taking out loans to fulfill its economic activities? Report how the company has solved an economic problem by talking to your company patron.
4. What kind of activities are performed related to Advanced Material Characterization Techniques in the company?
5. Tell us about the planning activities implemented in the period from order taking to the start of production and give an example of the forms used in this process.
6. How are demand forecasts made in the business? Explain with an example.
7. Did you take an active part in the company or take the necessary activities to solve any problem or take part in any project as an officer?

**QUESTIONS REGARDING WEX 326 COURSE (3rd CLASS 2nd SEMESTER)**

1. If your company is different from the previous company, answer the questions1, 3, 4, 7, 10 of WED 124, question 2 of WAP 225, question 3 of WAP 226, and questions 2, 3, 4, 5 of WAP 325.
2. What are the activities performed related to Introduction to Micro- & Nano-Manufacturing Techniques, Design for Materials Engineers in the company?
3. Is there a separate group/department in the firm looking after the quality of the products and the processes? Who does the head of that group report to? How many employees work in that group? What are their roles? Name a few actions related to Quality Control in the company. Name a few actions related to Quality Assurance in the company. What is the process of handling the rejected products? Name a few actions related to Process Improvements in the company.
4. What are the marketing channels of the business, what activities are carried out for marketing management?
5. If R&D studies are carried out in the enterprise, specify what they are and by whom and how they are carried out.
6. Which Industry 4.0 applications (such as artificial intelligence, robotics, business intelligence, big data) are available in the company?
7. Did you take an active part in the business or take the necessary activities to solve any problem or take part in any project as an officer?

**QUESTIONS REGARDING WEX 425 COURSE (4th CLASS 1st SEMESTER)**

1. If your company is different from the previous company, answer WED 124 questions 1, 3, 4, 7, 10; WAP 225 questions 2; WAP 226 question 3; WAP 325 questions 2, 4, 5; and WEX 326 questions 2,3.
2. Give detailed information about hardware, card design, production line works, calibration, quality tests of at least 3 products manufactured in the facility.

**QUESTIONS REGARDING WEX 426 COURSE (4th GRADE 2nd SEMESTER):**

1. If your company is different from the previous company, answer WED 124 questions 1, 3, 4, 7, 10; WAP 225 question 2; WAP 226 question 3; WAP 325 questions 2, 4, 5; and WEX 326 questions 2,3.
2. Choose a subject/problem related to the field of activity of the business with your company patron and your academic consultant.
3. Relate the topic/problem you have chosen with the theory you learned at school, with one or more materials science and engineering subfields.
4. Do a literature review for the problem you have chosen. Compile and report the literature together with your advisor.
5. Collect and compile the data required for the problem you have chosen. Evaluate the reliability and accuracy of these data.
6. Create a mathematical model of the problem you have chosen. While creating a model, parameters, variables, constraints and objective function should be explained clearly and comprehensibly.
7. Do research on the solution proposals and techniques of the proposed mathematical model. Choose the solution technique that is most suitable for the solution of your problem among the solution techniques you have determined, and explain it together with the reasons for the choice.
8. Test your proposed model with the solution method you have chosen using the data you will obtain from the business.
9. Discuss the effect of changing the model parameters on the solution.
10. Report the problem solution and results in accordance with scientific writing techniques.
11. Create a bibliography in your report. Cite all references in the bibliography in your report.
12. Discuss the contribution of the problem you have solved to the business and scientific literature.
13. Do not forget that the expected output of this study is of engineering work such as circuit/board design, system design, software development, etc.

**EVALUATION QUESTIONS**

1. Please describe the work you have done in an average day during this internship.
2. Write down how you feel in the company as an engineer candidate, covering one day at the beginning, middle and end of the internship.
3. Do you find this practical study instruction sufficient?
4. If there are topics and questions you want to add, you can add them and answer these questions.
5. Indicate the contributions (positive/negative attitudes) of the personnel in the enterprise to your practical work.
6. Evaluate the contribution of your internship to your education.

**APPENDIX 1 1**

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