Ministry of Education and Science of Ukraine
Ternopil Ivan Pul'uj National Technical University

Computer Systems and
Networks Department

GUIDELINES FOR THE INDUSTRIAL PRACTICAL TRAINING OF STUDENTS OF EDUCATIONAL PROGRAMS
FOR THE DIRECTION OF
6.050102 "COMPUTER ENGINEERING"

Ternopil
2017

Guidelines for the Industrial Practical Training of Students of educational programs in the field 6.050102 "Computer Engineering"/ H.M. Osukhivska, N.S. Lutsyk – Ternopil Ivan Pul'uj National Technical University. – Ternopil: TNTU, 2017.

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The guidelines have been discussed and approved at the meeting of the department of Computer Systems and Networks of the Ternopil Ivan Pul'uj National Technical University on May 30, 2017, protocol No.10.

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INTRODUCTION

The educational and professional program and course description in field 6.050102 "Computer Engineering" involves the industrial practical training for students. This practical training is performed on the bases of practical training that are accordingly equipped enterprises, institutions, etc.

The passing of practical training is a self-study student's work directly at the workplace. During practical training passing the students have to familiarize with their specialty and analyze information processes in a particular enterprise; identify deficiencies inherent to the enterprise; learn new information technologies.

Students have to study general procedure of enterprise work, system management and organization of information processes.

This type of practical training intends to introduce the chosen specialty for the students and help them to gain practical skills on major specialty.

1 CONTENT, AIMS AND TASKS OF INDUSTRIAL PRACTICAL TRAINING

1.1 Goal of the industrial practical training

The aim of industrial practical training is to familiarize students with different possibilities of computer systems and networks exploitation that used on the bases of practical training. The students should obtain knowledge about technical materials and processes used in practical training, about problems of the enterprise and new information technologies of enterprise needs.

Industrial practical training intends to introduce the chosen specialty for the students and help them to gain practical skills on major specialty.

The tasks of practical training include:
- deepening knowledge acquired at the university;
- mastering practical skills at the industrial practical training base workplace;
- accumulation of independent work experience according to the specialty;
- familiarization with devices, material and energy resources that are used at the industrial practical base;
- familiarization with characteristics, parameters and appointment of computers that are used at the practical training base;
- familiarization with standardization measures at the industrial practical training base;
- familiarization with labour safety measures, sanitation and hygiene;

- familiarization with the types of documents used at the enterprise, documents production, storage and transmission;
- familiarization with characteristics of computer systems that are used at the practical training base;
- familiarization with registration and patenting of inventions.

1.2 Duration, structure and schedule of the industrial practical training

The industrial practical training lasts 3 weeks.

The verification of carrying out the practical training according to the guidelines as well as the possible accreditation from this takes place after the start of studies. For this, full documentation of the practical training (report and practical training blog) must be submitted to the department at the beginning of the next semester without any specific reminder.

Names of structural modules and topics	Number of hours					
	Total	Including				
		lec	lab	prac	ind	self study
Thematic module 1. The accomplishing of practical training program						
Topic 1. Work safety and fire safety instructions. Familiarization with the structure of the company. Studying of job descriptions.	27	-	-	-	-	27
Topic 2. Workplace hardware and software. Specific features of their operation.	27	-	-	-	-	27
Topic 3. Familiarization with modern methods, forms of organization and technical facilities in computer technology used at the workplace.	27	-	-	-	-	27
Topic 4. Problems that are solved with the use of computer technology and equipment at the company.	27	-	-	-	-	27
Topic5. Personal participate in scheduled and unscheduled works carried out at the company.	27	-	-	-	-	27
Total on thematic module 1	135	-	-	-	-	135

Thematic module 2. Report defense						
Topic 1. Making report on practical training	27	-	-	-	-	27
Total on thematic module 2	27	-	-	-	-	27
Total	189	-	-	-	-	189

1.3 Supervision of trainees

In the companies, the trainees are usually under the care of a training supervisor, who provides for appropriate training in line with company capabilities and the practical training regulations. He or she is the contact person for the trainees on technical matters.

1.4 Individual tasks

It is necessary to pay a special attention to individual tasks because they develop independence in solving technical issues and expand students' horizons as professionals.

Training supervisor in company gives the student individual task according to the purpose and content of practical training also taking into account the needs and specific of the company.

1.5 Report on industrial practical training

The trainees have to compile a report about their activities during their practical training. The report, which should describe the performed activities in a single coherent text (no daily reports), should document the experience gained in the work process (performed activities, work routines, employment of machines and methods, organizational regulations, impact of machines on humans and the environment, problems which occurred). A short description of the company must be

included (line of business, size and products). Either reporting notebooks or stapled DIN A4 sheets are to be used for the reports.

Attention must be paid to not publishing company secrecy and sensitive data. Calculation examples must in these cases be conducted with fictitious data and they must be marked as fictitious.

The report should be about 10 DIN A4 pages in length (sketches and text). The reports should be typewritten. All reports must be stamped and signed by the instructor.

1.6 Practical training confirmation

On completion of the practical training, the trainee receives a confirmation from the company stating the length of the training in various work areas and any days of absence from the company due to sickness or vacation. The practical training confirmation must be issued by the internship company.

Such confirmation document is a practical training blog.

1.7 Presentation

Students report on their industrial practical training in form of an oral presentation to their tutor. All professors of the respective engineering faculties can be tutors. The tutor will be assigned by the responsible practical training office. The type and duration of the oral presentation are to be discussed with the tutor. After the presentation and the ensuing discussion the tutor issues a confirmation, which must be presented at the practical training office together with all accredited

practical training confirmations in order to receive accreditation of the practical training.

1.8 Accreditation of the industrial practical training

For accreditation of the practical training, presentation of the report and the practical training confirmation in the original is obligatory; furthermore, the presentation confirmation issued by the tutor must be presented.

The practical training documents are to be presented to the practical training office for approval at the latest one month after completion of the practical training.

The practical training office decides in how far the industrial practical training meets with the regulations and whether it can be accredited as a practical training. It, respectively he or she, confirms the approved duration of the practical training on the confirmation issued by the practical training company submitted with the report.

2 INDUSTRIAL PRACTICAL TRAINING REPORT GUIDELINES

2.1 Industrial Practical Training Report Introduction

Industrial practical training report guidelines in this manual refer to a documented report of the training and experience undergone by a student in partial fulfillment of the requirements for a bachelor degree. These guidelines will outline the report format for the industrial practical training report guidelines.

2.2 Industrial Practical Training Report Contents

Industrial practical training report should contain the items as suggested below and is to be presented in the manner and order listed. Details and specimens are shown in appendices.

Industrial practical training report mainly has the following **structure:**

The front cover (title page)

Table of contents

Introduction

1 Industrial practical training base description

2 Summary of working experience

Conclusions

References

Appendices

The practical training blog should be added to the report. Practical training blog is needed for chronological recording the student's production activities results in accordance with the schedule of industrial practical training.

2.3 Front Cover (Title Page)

The front cover (title page) must contain the further information:

- University name (Ternopil Ivan Pul'uj State Technical University)

- Department name (Computer Systems and Networks Department)

- Document name (Industrial Practical Training Report)

- Student's full name

- Training supervisor's in company full name

- Training supervisor's in university full name

The page must be signed by the student and training supervisor in company and in university.

Refer to sample in Appendix A.

2.4 Table of Contents Page

This page should list all sections, chapters and sub-headings with their respective page numbers as reflected in the body of the Industrial Practical Training Report. The table of contents needs to be a good guide as to what are contained in the Industrial Practical Training Report.

Student can use the following example.

TABLE OF CONTENTS

2.5 References

References are detailed descriptions of resources from which information or ideas were obtained in preparing the Industrial Practical Training Report. The details of every references cited in the text, published or unpublished, must be listed alphabetically.

2.6 List of Appendices

This page should list all the appendices found in the end of the Industrial Practical Training Report together with their page numbers. Appendices include tables, charts, graphics and computer program listings etc., which are too lengthy and inconvenient to be included in the

text itself. All appendices should be titled and numbered alphabetically, e.g. Appendix A, Appendix B and so on.

2.7 Text (Body of the Practical Training Report)

An Industrial Practical Training Report must be divided into chapters. A title which reflects its content must be given to each chapter. A new chapter must begin on a new page. A chapter must be further divided into different sections with appropriate titles numbered accordingly. The body of the Industrial Practical Training Report must be written in paragraphs. Each paragraph describes an issue or a subject. There must be continuity or logical flow between paragraphs. Long paragraphs should be avoided. The text should contain the following:

- Introduction
- Industrial practical training base description
- Details of the Working Experience
- Conclusions

Attention should be paid to correct spelling, grammar, punctuation, sentence structure and clarity of style.

2.8 Tables in the Text

Data can be presented in the form of tables. All tables should be word-processed into the Industrial Practical Training Report. It is not acceptable to insert photocopies of tables into the body of the report.

2.9 Figures in the Text

Illustrations such as diagrams, photographs, drawings, graphs, charts and maps are referred as figures. All figures must be clear and of high quality. Photographs should be digitally embedded in the text unless absolutely impossible.

3 BODY OF INDUSTRIAL PRACTICAL TRAINING REPORT

The body of the Industrial Practical Training Report should contain at least the following chapters. It must clearly demonstrate the students' learning process and achievements of the desired Programs Outcomes.

3.1 Introduction/Learning Outcome

In general, this chapter starts with a general introduction of the organization or company background during their practical training period. The organization chart must be included in this report.

Next, it outlines the learning outcomes of industrial practical training and describes briefly the job description or task setting during the training and the working experience in engineering design, site work, project management etc. Among others, the following details must be included:

- Name & address of company
- Name & position of Practical supervisor
- Start date & completion date of training

3.2 Detail of Working Experience

This chapter starts with a detail description of the working experience during the practical training period. This includes the type of

project(s) that the student has involved in during the practical training period.

3.2.1 Description of Tasks

This section begins with the assigned tasks and the settings during training.

3.2.2 Applications of Theory and Soft Skills

This section covers the applications of technical knowledge and soft skills for each assigned task. This includes challenges and difficulties encountered by the student.

Next, the student needs to explain the solution(s) or action(s) taken to cope with the challenges and difficulties. It is important to highlight the results and contributions to the company. The attainments of the desired Program Outcomes must be demonstrated in the contents of the report.

3.3 Conclusion

This chapter summarizes the working experience identifying the student's strength and weaknesses during training, and describes how the Practical attachment has helped his/her personal growth, development, and preparation or expectation for future professional work. The student also needs to give a summary of the project(s) involved in, include a project description and his/her role(s) in each particular project. These conclusion needs to relate back to the learning outcomes of Industrial Practical Training.

4 ACKNOWLEDGEMENT OF SOURCES

As a matter of intellectual honesty and to avoid plagiarism, students must acknowledge where ideas, information or arguments come from by citing references. The purpose of the citation is to acknowledge the work of others and to demonstrate the student's ability to apply ideas, information or codes of standards to solve problems.

Using the works of others can be presented in the forms of quotation, paraphrase or simply mentioning or stating the knowledge from the source. Internet information should only be treated as secondary or supporting reference.

5 FORMAT OF PRACTICAL TRAINING REPORT

All reports should use the following formatting: 14-point Times New Roman font, 3cm left page margin and 1.5cm the other ones, A4 paper, full justification, 1.5 line spacing.

Each page of the Industrial Practical Training Report must be counted and numbered accordingly. Page numbers should be printed at the bottom right hand corner of the page.

Reports that ignore the formatting guidelines will be disqualified.

REFERENCES

1. Industrial Training. Report Guidelines. *Universiti Tunku Abdul Rahman. Faculty of Engineering and Science,* p. 33

2. M. Modigell. Guidelines for the Practical Training of Students of the Diploma Degree Program Business Administration and Engineering (field of Mechanical Engineering) at RWTH Aachen University. *Internship Office of the Faculty of Mechanical Engineering. RWTH Aachen University,* p. 6

3. H.M. Osukhivska, N.Y. Shynhera (2015). Guidelines for the Practical Training of Students of educational programs for the direction of 6.050102 "Computer Engineering". *Ternopil Ivan Pul'uj National Technical University. – Ternopil: TNTU,* p. 20

Appendix A Format of Front Cover

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
TERNOPIL IVAN PUL'UJ NATIONAL TECHNICAL UNIVERSITY

Computer Systems and Networks Department

INDUSTRIAL PRACTICAL TRAINING REPORT

Prepared by the student of ICI-32

STUDENT'S NAME

«___» _____2017

Training supervisor in
company_____NAME
                          (signature)

«___»_____2017

Training supervisor in
university _____NAME
                          (signature)

«___»_____2017

Ternopil, 2017