**VILNIAUS KOLEGIJA / HIGHER EDUCATION INSTITUTION
FACULTY OF ELECTRONICS AND INFORMATICS
SOFTWARE DEVELOPMENT DEPARTMENT**

**METHODOLOGICAL GUIDELINES OF PROFESSIONAL PRACTICE
ACTIVITIES**

SOFTWARE ENGINEERING, state code 6531BX028

2025

INTRODUCTION

These methodological guidelines are intended for students of the Software Engineering study programme (state code 6531BX028) at the Faculty of Electronics and Informatics of Vilniaus Kolegija / Higher Education Institution. This document provides instructions that describe the objectives of the professional practice and outline the requirements for the professional practice report. Information related to the professional practice is provided and continuously updated in the VMA Moodle environment.

1. STRUCTURE OF PROFESSIONAL PRACTICE ACTIVITY

The professional practice consists of the following parts:

- the software-related part of the professional practice;
- the professional practice report;
- the individual practice assignment (Appendix 2);
- the evaluation form completed by the practice supervisor in the placement organization (Appendix 3).

The individual practice assignment must be coordinated with the company's practice supervisor and approved within 10 working days from the start of the practice. It must then be submitted to the faculty's practice supervisor.

1.1. Software Design and Implementation Part

Software design part of the professional practice activity can be:

- a program which addresses applied tasks, intended for one or a group of users;
- mobile application;
- website;
- software for embedded devices and data stream control.

Software design and implementation (project) part of the professional practice activity should not be:

- designed from already existing software without the use of any code snippets or fragments of the undergraduate source code;
- designed using software that is not used at Vilnius University of Applied Sciences and the undergraduate cannot freely dispose the license of the chosen software (except when it is possible to demonstrate designed software on a virtual or remote machine).

1.2. The Professional Practice Activity Report

The professional practice report must be prepared in accordance with the *General Requirements for Academic Papers*. The current version of the General Requirements is available on the Faculty website under the *Study Documents* section: https://eif.viko.lt/studiju-dokumentai-2/.

The professional practice report consists of the following parts:

• Title page (a title page template is provided in Appendix 1);

• List of terms and abbreviations;

• Table of contents;

• List of figures;

• List of tables;

• Introduction;

• Formulation of the practice assignment;

• Analysis of the practice assignment;

• Description of the software implementation;

• User manual;

• Conclusions and recommendations;

• List of information sources;

• Appendices (the *Individual Practice Assignment* appendix is mandatory).

1.2.1. Introduction

In this part, the trainee must submit:

• Brief description of the company and its activities, analysis of the company IS.

• Definition of the problem area examined during the professional practice.

• The aim of professional practice, which must be specific, measurable, and realistically achievable.

• Tasks that define the scope of work and match the goal. Tasks must be numbered. The length of the chapter 1-2 pages.

1.2.2. Formulation of the Practice Assignment

In this section, the trainee must provide the functional and non-functional requirements for the software being developed.

Functional requirements describe what the software implementation will be capable of doing. These requirements specify the main and auxiliary functions of the program being developed. Main functions are aimed at fulfilling the primary purpose of the software. Auxiliary functions are influenced

by technological requirements and are typically used for maintaining or servicing the software (e.g., work logging, data archiving, statistical data collection, etc.).

When formulating functional requirements, the following must be specified for each function: its input data, the actions it performs, and the expected result. The execution order of the functions and any constraints on their execution should also be indicated. Non-functional requirements define the constraints that limit the range of possible design solutions. When the calculations are made - the formulae used must be explained. The length of the chapter is 3-5 pages.

1.2.3. Professional Practice Activity Task Analysis

In this part, the trainee must submit:

- Use case diagram and its description;
- Activity diagram and its description;
- Other UML diagrams and their descriptions;
- ER diagram (or its alternative) and its description;
- Class diagram (project directory structure or its alternative) and its description.

The length of task analysis chapter is not less than 7 pages.

1.2.4. Description of Software Realization Task

In this part, the trainee must submit:

- Descriptions of the most important software implementation files, showing their purpose and interdependence.
- Descriptions of classes and their methods: the order of executed steps, initial data, structure of the results.
- The physical model of the database (if any) and its description.
- Descriptions of other software constructs, such as components, modules and their interrelationships.

Software code fragments must be inserted into the professional practice report using the Courier New font, size 10 pt, with single line spacing between code lines. It is not allowed to include screenshots of the software code in the report.

The length of software implementation chapter is not less than 10 pages.

1.2.5. User Manual

In this section, the trainee must provide a detailed installation guide, including:

- the dependency of the software implementation on other software products (provide a description of the system or other software components without which the implementation cannot be launched);

- specification of the computer hardware parameters on which the software implementation was developed and tested;

- a detailed description of the software installation process;

- a description of a typical configuration (if applicable);

- a detailed description of how to launch the software implementation (especially for those developing mobile applications, websites, or other internet-based services);

- the steps required to uninstall the software.

The length of the chapter is not less than 6 pages.

1.2.6.   Conclusions and Recommendations

In this part, the trainee must submit:

- Conclusions that correspond to the tasks addressed and relate to the practical work. Conclusions must be numbered, reasoned, specific, comprehensive, and consistent with the purpose and tasks of the professional practice activity. For each task, at least one conclusion must be formulated, briefly stating what was done to implement the task and what results were achieved, emphasizing the practical importance.

- Suggestions on how the results achieved during the practice can be improved.

The length of the chapter from 1 to 2 pages.

1.2.7.   The List of References

This section lists all the sources of information that were used for the practice assignment. The section is not numbered. The list of information sources is arranged alphabetically by the authors' surnames. If the authors' surnames/names are not given in the bibliographic description, this description is sorted by title. The list of information sources starts with information sources in Lithuanian. The list continues with descriptions of information sources published in other languages. All sources listed are written in the original language.

Note: Bibliographic descriptions of information sources published in languages based on the Cyrillic alphabet are listed last.

Books (including electronic books) are included first in the list of information sources.

For information sources, it is recommended to indicate the resources of the databases and/or electronic books which are subscribed by Vilniaus kolegija/Higher Education Institution. Sources of information can be:

- books;

- periodicals;

- electronic information sources, etc.

Sources of information must be cited in the text.

The list of information sources is compiled in accordance with the rules of APA citation style.

The list of information sources must contain at least 5 information sources.

1.2.8. Appendixes

In this section, the trainee may submit illustrative material, diagrams, charts, graphs, tables, sample reports and others that do not fit in the main body due to their large size or require a change in text formatting.

The appendices are listed in the order in which they are mentioned.

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PROFESSIONAL PRACTICE ACTIVITY REPORT

PA 6531BX028 PI20X

PRACTICE PLACE: ORGANIZATION NAME

PRACTICE SUPERVISOR IN THE PLACEMENT ORGANIZATION	202_ - __ - __	NAME SURNAME
STUDENT	202_ - __ - __	NAME SURNAME
PRACTICE SUPERVISOR IN THE FACULTY	202_ - __ - __	NAME SURNAME

202_

APPENDIX 2. INDIVIDUAL PRACTICE ASSIGNMENT

VILNIAUS KOLEGIJA / HIGHER EDUCATION INSTITUTION
FACULTY OF ELECTRONICS AND INFORMATICS
SOFTWARE DEVELOPMENT DEPARTMENT

INDIVIDUAL PRACTICE ASSIGNMENT

Student _____ Group _____
                          (name, surname)

Title of the practice: professional / final.
(underline the appropriate one)

Aim: _____

_____

Objectives:

   1. _____

      _____

   2. _____

      _____

   3. _____

      _____

   4. _____

      _____

Practice supervisor at the placement organization

_____
                         (name, surname, responsibilities, signature)

EIF practice supervisor _____
                         (name, surname, responsibilities, signature)

20____ _____mm ____dd

3 APPENDIX. THE PRACTICE ACTIVITY EVALUATION FORM FOR THE PRACTICE ACTIVITY SUPERVISOR IN THE PLACEMENT ORGANIZATION

VILNIAUS KOLEGIJA / HIGHER EDUCATION INSTITUTION
FACULTY OF ELECTRONICS AND INFORMATICS

Student_____
(name, surname)

Study programme – **Software engineering**,

Study form – **full-time**, year – **3**, group – **PI __ _**.

Practice activity place_____
_____

Duration of practice activity– from **202_-__-__** to **202_-__-__**, practice scope – **12 credits.**

Faculty practice activity supervisor _____
(name, surname, signature)

_____

EVALUATION OF THE STUDENT PERFORMANCE OF THE PROFESSIONAL PRACTICE ACTIVITY

1. Attitude to work (interest in work, initiative, duty, neatness, discipline, etc.):
_____
_____
_____

2. Weaknesses of theoretical preparation, that revealed during professional practice activity:
_____
_____
_____
_____
_____

3. Quality of the executed tasks, autonomy:_____
_____
_____
_____
_____

4. Assessment of the practice in grades _____

Practice supervisor of the placement organization_____
(name, surname, responsibilities)

_____

yy/mm/dd

Signature
A. V.