Tallinn Learning OÜ

Approved on 20.10.2025

Name of the Study Program:

QA Engineer in Manual and Automated Software Testing

Group of Study Programs

153135 Software and Application Development and Analysis / Tarkvara ja rakenduste arendus ning analüüs

Learning Objectives

The purpose of this course is to develop comprehensive knowledge and skills in manual and automated software testing.

Knowledge and skills acquired upon successful completion of the study program; expected learning outcomes.

Upon completion, the learner:

- Knows the principles and techniques of test design;
- Understands test design in the context of test automation, which allows creating high-quality test scenarios;
- Uses various tools for conducting testing, including modern technologies relevant to the market;
- Understands the software development process and the role of testing within it;
- Can prepare test documentation (checklist / test case / bug report / test plan / test report);
- Can plan the testing process;
- Knows principles and tools for testing web and mobile applications;
- Understands client–server architecture and principles of REST API;
- Can write SQL queries and understands the basics of working with databases;
- Automates API testing scenarios using Postman;
- Has 8 practical projects in the portfolio, which can be demonstrated to potential employers;
- Plans the test automation process, including goal definition, strategy development, and creation of necessary documentation;
- Automates testing scenarios for APIs and web applications, ensuring high software stability and quality.

Target Audience

The course is intended for specialists who want to learn manual and automated software testing. Learners acquire the basic knowledge and skills required to work as a QA engineer in Estonia and abroad.

Entry Requirements

Basic computer skills: turning a computer on and off, working with keyboard and mouse, using a browser, creating and editing Word documents.
The student must have a computer with an internet connection.

Language of Instruction

English

Total Study Volume

328 academic hours

Self-study: 224 academic hours
Classroom work: 104 academic hours (52 online lessons × 2 academic hours)

Duration of Studies

10 months

Study Format

The study program is based on the professional standard *Tarkvaraarendaja, level 6, competency B.3.5*, and the ISTQB requirements for foundation-level certification, as well as modern trends in the IT industry.
The program ensures a comprehensive understanding of essential skills and knowledge in information technology.

Module 1. Manual Testing

Block 1. Fundamentals of Testing

Software testing basics: definition, tasks, test documentation.

Test design: requirement analysis, principles of test design, test design techniques (equivalence classes, boundary values).

5 webinars. 10 academic hours of classroom work and 20 academic hours of self-study.

Block 2. Web Application Testing

Web application architecture: client–server, URL, HTTP, DevTools.

GUI testing: forms, validation, responsiveness.

3 webinars. 6 academic hours of classroom work and 12 academic hours of self-study.

Introduction to mobile testing. Android Studio.

API concepts and REST API testing. JSON. Postman and curl. Swagger. SOAP API. XML, XSD.

4 webinars. 8 academic hours of classroom work and 16 academic hours of self-study.

Block 4. Databases & SQL. Linux Console

Working with databases: creating SQL queries, sorting, logical operators, JOIN.

Operating systems. Working in the console: commands, arguments, grep, ping, VIM editor.

5 webinars. 10 academic hours of classroom work and 20 academic hours of self-study.

Block 5. Final Project

Testing a service: web + mobile application.

Overview of QA processes and test environments.

Introduction to test automation and CI/CD processes.

7 webinars. 14 academic hours of classroom work and 28 academic hours of self-study.

Module 2. Job Preparation

Block 6. Career Consultations

1. Resume preparation and LinkedIn
2. Soft skills development
3. Interview practice
4. Motivation letter

Format: **4 webinars, 8 academic hours of classroom work and 16 academic hours of self-study.**

Module 3. Test Automation. TypeScript & Playwright

Block 7. Introduction

Introduction to automation. Testing pyramid.

JavaScript and TypeScript. Development environment.

Data types, variables, constants. Classes and methods.

Playwright: creating the first project.

5 webinars. 10 academic hours of classroom work and 20 academic hours of self-study.

Block 8. Unit Testing and API Testing

Unit tests. Playwright annotations. Parameterization. Tags.

API testing: HTTP requests and responses.

API autotests for the project: authorization, client, coverage.

Mock server.

10 webinars. 20 academic hours of classroom work and 40 academic hours of self-study.

Block 9. Web Application Testing

Introduction. Locator strategies.

UI tests: Page Object, Singleton.

Covering the “to-do” application with UI tests.

Component tests and server startup.

End-to-end tests: combining UI and API.

Allure, Trace Viewer.

9 webinars. 18 academic hours of classroom work and 36 academic hours of self-study.

Teaching Methods

Classroom and practical work. Lectures, discussions, assignments, software testing, preparing documentation.

Self-study: reading materials, watching videos.

Communication in Telegram.

Completion Requirements

80% attendance and completion of homework. Final examination.

Documents Issued Upon Completion

- **Certificate** — for 80% attendance and successful testing.
- **Statement of Participation** — for partial completion without full results.
- **Attendance Confirmation** — for attending at least half of the lessons.

Instructors

- **Daniil Borodin** — over 15 years of experience, senior automation engineer, trainer.
- **Andrey Khramenkov** — over 5 years of experience, mentor.
- **Vladimir Ovodenko** — course author, over 12 years of experience, simulation developer.
- **Aleksandr Teder** — over 6 years of experience, head of QA competency.