

# **Professional Internship Program of the Mathematics of Modern Technologies Study Program**

## **Goal of the internship**

To integrate the knowledge acquired during studies with practical activities, improve teamwork and independent work skills, become familiar with future professional activities and the technologies used in the company, and acquire new knowledge.

## **Duration of the internship**

The professional internship in the Mathematics of Modern Technologies study program takes place in the 8th semester. The internship comprises a total of 15 credits and 400 hours.

## **Recommended internship placements**

The internship may be completed at a company of your choice, both in Lithuania and abroad. Suitable companies include those operating in the fields of information technology, big data processing and analysis, insurance, and the development of modern technologies. Alternatively any company that extensively uses information technologies in its operations, processes large data streams, and applies mathematical models and analytical methods to its activities, is suitable for the internship. The internship may be carried out at companies, other higher education institutions, or VILNIUS TECH departments. Your chosen internship placement should align with the field of study.

## **Internship Program Description**

During the internship, under the guidance of the company supervisor, the student performs the assigned tasks, applies the knowledge acquired during their studies in practice, broadens their horizons, and gains new experience and competencies. Students of the Mathematics of Modern Technologies study program should take an interest in the company's operational processes, the services provided and their delivery methods, data collection, storage, and processing techniques, as well as corporate organization, modernization opportunities, the decision-making process, and the direct or indirect application of knowledge from specific mathematical fields.

## **Examples of individual internship tasks**

- Analysis and improvement of large-scale data stream processing algorithms.
- The search and implementation of specific technological solutions.
- Application of various mathematical tools for data analysis.
- Introduction to data security solutions.
- Solving insurance (actuarial) mathematics problems.

- Acquisition of new skills and tools (specialized software, programming in new languages, etc.).

Specific internship tasks are formulated taking into account the nature of the company's activities, in coordination with the internship supervisors both at the company and the university. The tasks set must meet the requirements of the study program's internship and must be coordinated with both the University and the company. One internship task may also be assigned to several students. During the first week of the internship, the task may be adjusted or changed. Any modifications must be coordinated with the supervisor appointed by the department and the internship supervisor at the company.

## **Requirements for the internship report**

Upon completion of the internship, the student must submit the response by internship supervisor from enterprise to the university supervisor in a timely manner, as well as prepare and defend the internship report.

The internship report consists of: a title page and a table of contents; the report must formulate the purpose and objectives of the internship, briefly introduce the internship placement (the enterprise and the intern's activities), analyze the tasks performed during the internship, present and discuss the results, and provide a list of references; if necessary, the report may also include appendices.

The internship report must be written in correct language, adhering to all clerical work regulations, and the volume of the report should not exceed 10 printed A4 pages, with margins of 3 cm on the left, 1 cm on the right, and 2 cm each at the top and bottom. The report text must be prepared in Times New Roman, font size 12 pt, and in black. Chapter headings must be font size 14 pt. Paragraphs are justified on both sides. The first line of each paragraph must have a 1.27 cm indent. Tables and figures must be centered, numbered, and must include a title set in font size 11 pt. The text must include references to all tables and figures. Formulas must also be numbered if they are cited in the text.

The internship report must reach your designated university supervisor in the department no later than 3 days before the scheduled internship assessment deadline. The university supervisor evaluates the report and its defense, and enters the grade into the grade sheet.

The defense of the internship report is an interview between the student and the university supervisor, aimed at determining whether the student has achieved the purpose of the internship, and how the student analyzes and evaluates the internship results.

The evaluation consists of three parts: the assessment of the internship report, the evaluation provided by the internship supervisor from the enterprise, and the assessment of the knowledge demonstrated by the student during the defense of the internship report.

The internship is not credited if the student fails to show up for the internship, leaves the enterprise placement without completing it, fails to perform the specified tasks, receives a negative response by internship supervisor from enterprise, or fails to defend the internship report. Furthermore, if there is no possibility to complete the internship at another time, the student incurs an academic

debt, which can be liquidated in accordance with the Description of the Procedure for Organizing Examination Sessions and the Preparation and Defense of Final Thesis."

The internship reports submitted by students are stored in the department for no less than the period specified in the Description of the Procedure for Archiving and Storing Student Work at VILNIUS TECH."

The program was prepared by

Teresė Leonavičienė