**Course title:** Data Structures and Algorithms 3 (code I384)

**Level:** bachelor

**Status:** obligatory for the *Computer Science* module, elective for *Information Technologies* module

**ECTS:** 7

**Requirements:** Completed course in Data Structures and Algorithms 2

**Learning objectives**
Students learn to understand and use data structures GRAPH and TREE.

**Learning outcomes**
*Minimal:* Students are expected to implement different types of TREES and GRAPHS
*Desirable:* Students are expected to implement different types of TREES and GRAPHS and to recognize desirable structure for problem solving.

**Syllabus**

**Theory**
Abstract data type TREE and its implementations. Tree traversals. Search tree. Balanced search tree and its analysis. Different types of balanced tree (AVL-tree, B-tree, red-black tree, etc.)

**Practice**
Implementations of data structures TREE and GRAPH and their different applications.

**Weekly teaching load**

<table>
<thead>
<tr>
<th>Lectures: 2</th>
<th>Exercises: 3</th>
<th>Other forms of teaching: 0</th>
<th>Student research: 0</th>
<th>Other: 0</th>
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