

## **Implementation of data structures and algorithms**

### **Short Project 4: Depth First Search**

Version 1.0: Initial description (Friday, Sep 20).

**Due: 11:59 PM, Mon, Sep 30 2019.**

Submission procedure: same as usual.

#### **Team task:**

1. Implement `topologicalOrdering1()` in the starter code (`DFS.java`). This is the DFS-based algorithm for finding the topological ordering of a directed acyclic graph.

#### **Practice task (optional):**

2. Implement `topologicalOrdering2(g)` in the starter code. In this algorithm, we identify a node with no incoming edges, and remove it and all of its edges. Repeat this until the graph is empty.
3. Implement `connectedComponents()` in the starter code. In this algorithm, use DFS to find the number of connected components of a given undirected graph. Each node gets a cno. All nodes in the same connected component receive the same cno.