Graph Theory

Course Overview

Level of study	Master Degree
Workload	**ECTS: 2** **Total Hours: 36** **Contact Hours:** • **Lectures: 18** • **Labs:** • **Seminars: 18**
Course Code	
Semester	**Summer**
Prerequisites	**No**
Course Objectives	1. **To learn the fundamental theory about graphs (definitions, theorems and their proofs)** 2. **To study the basic algorithms of graph theory and their modifications** 3. **To know applications of graph theory**
Learning Outcomes	1. **Knowledge of basic definitions and theoretical results of the graph theory** 2. **Knowledge of basic algorithms of graph theory and their implementation** 3. **Skills in modification of basic graph algorithms to solve nonstandard problems in different applications** 4. **Skills in both oral and written scientific communications**
Syllabus	1. **Location problem** 2. **Flows in networks** 3. **Covering and matching problems** 4. **Euler graphs** 5. **Hamiltonian graphs**
Labs	
Projects	**Projects include implementing algorithms in a programming language, delivering lectures and seminars, writing reviews of scientific papers. Any other options can be considered.**

Assessment	Credit test
Resources	https://www.coursera.org http://www.graphtheory.com http://www.freebookcentre.net/Mathematics/Graph-Theory-Books.html http://www.download32.com/graph-theory-software.html https://sourceforge.net/projects/graphalg/
Instructors	**Yulia B. Burkatovskaya** http://portal.tpu.ru/SHARED/t/TRACEY/English