Hadassah Academic College | **Department of Computer Science**

Course: Protocols and Computer Networks | **Fall Semester 2023-4 — Graduate**

Dr. Martin Land | **Final Submission: 5 March 2024**

Course Project

The course Protocols and Communication Networks deals with networking as it appears to professionals in the 21st century. The lectures combine theory and practical examples, with the goal of understanding the contemporary picture.

In the project, you will expand the knowledge you acquired in one of two forms:

1. Developing a software system that implements a method from the course in simulation, measurement, or other appropriate ways.
2. Writing a term paper that presents two research papers related to the material of the course, and analyzes the technologies they present using the methods of the course.

Notice that this assignment is a final project and not an exam. Some differences:

- An exam form is the same for each student. In a final project, each pair of students works on a different topic and determine the questions they will address.
- An exam tests the ability to apply defined knowledge in a short time. In the project, you have time to learn and apply new material based on the course.
- When grading an exam, points are taken off for incorrect answers. In any project, there may be various different but appropriate approaches to analysis and design. The grade for a basic correct presentation in 80. In this project you will use your judgment in choosing relevant methods from the course, so that an additional 20 points will be given depending on the quality of these choices and the resulting work.
- As in any academic writing, it is important to explain assumptions, compromises, dilemmas, and thought processes.

General instructions for a software project: The goal of the project is to implement and demonstrate one of the methods learned in the course. This includes definition of the technology, the aspects to be implemented, and the method of implementation, a detailed explanation of the ability of the project to exhibit the features of the technology, analysis of the usefulness of the technology as seen in the implementation.

For example, if the project includes a simulation of a TCP enhancement, it should include an explanation of the expected improvement over standard TCP and provide evidence that the enhancement is successful.

General instructions for a term paper:

Choose two (or more) research papers that discuss methods related to architecture and present them according to the following structure: (1) An introduction that puts the papers into context and explains the problems that the paper seek to address or solve, (2) a Technical Background that presents methods required to understand the topic, beyond the level of material in the course, (3) a detailed discussion of each article, (4) a summary that compares the papers as differing approaches to a given problem, evaluates their research methods and results on the basis of material learned in the course, and discusses the practical contribution of the researchers' work. The project may be based on just one paper if it is of sufficient depth and quality. A good source for research papers in computer networking is:

https://arxiv.org/list/ cs.NI/current (Networking and Internet Architecture)

Submission (in pairs)

A proposal for the final project must be submitted by 7.1.2024 by email to martin@hac.ac.il. Each project proposal must receive approval. The proposal should include the names of the students and their student number.

The final project must be submitted by 23:59 on 5 March 2024 on the moodle page.