Workshop on Software Engineering Project

סדנא ליום פרוייקט הנדסת תוכנה

Prof. Mira Balaban

- **Course number**: 20215141
- **Mandatory**
- **Credits**: 3
- **Course Site**: [https://www.cs.bgu.ac.il/~wsep202](https://www.cs.bgu.ac.il/~wsep202)
- **Prerequisites**: Topics in Software Engineering – 202-1-5201

**Course Objectives**

This course is about implementing a software engineering project, using SE methodologies and principles taught in other courses, and using modern software technologies. The course functions as an SE-lab, where the students cope with a demanding SE task in a guided manner. The lab mimics a natural SE-development task, where usage of SE procedures is valuable and productive. It embodies the following features:

- Adopt an agile development approach.
- Maintenance challenges: Create a natural environment of successive changes due to complex evolution.
- Enable a thoughtful non-naïve customer (course staff), that plan intentionally complex requirements.
- Insist on product validation.
- Enforce SE-systematic development, including models, validation, testing, requirements analysis and reliability.
- Cope with technology challenges.
- Structured teamwork.

The goal of the lab is to acquire experience in using SE methodologies, methods and technologies.

**Course Content**

Project development consists of several short versions, each version having planning and implementation parts. The planning part is responsible for building a model of the planned software, based on the given requirements, and using a variety of viewpoints. The implementation part includes implementation of the designed models, including testing — unit, integration, regression and acceptance, and traceability means. At the end of each version the group produces a version document, that summarizes the version content, its properties (e.g., test coverage), and the relationship between the version plan and the actual implementation.
Project implementation uses technologies for communication, web applications, graphical interfaces, software-database connection, project management, bug tracking, unit testing, and version control.

The students in the course are organized in small student groups. All groups implement the software project which is the course theme. Within a group, the members take alternating roles as version leader, developer, and tester. The course staff takes the role of the customers, providing an initial requirement document. Each group has a staff member that functions as its advisor. The group meets its advisor once in two weeks, for a 2 hour long meeting. In that meeting the group presents its development for the current version, and one group member presents a topic that is relevant for the next version.

In addition to group meetings, the course includes several plenary sessions, in which project development principles, methods and methodologies are refreshed and discussed.

**Course Requirements**

- 6 2-hours group meetings with group advisors
- 3-4 plenary sessions
- One topic presentation during group meetings
- Commitments to the Software Engineering program, as listed on the course site
- Final grade rules:
  - Intermediate project versions = 40%
  - Final project version = 50%
  - Participation in group meetings = 5%
  - Presentation in group meetings = 5%

**References**

Material on the course site: [https://www.cs.bgu.ac.il/~ws202](https://www.cs.bgu.ac.il/~ws202)

3. Design Patterns: Elements of Reusable Object-Oriented Software, by E. Gamma, R. Helm, R. Johnson and J. Vlissides, Addison-Wesley, Reading (Mass.), 1995.