האוניברסיטה העברית בירושלים
THE HEBREW UNIVERSITY OF JERUSALEM

The Hebrew University of Jerusalem

Syllabus

Software Testing - 67778

Last update 23-01-2025

HU Credits: 2

Degree/Cycle: 1st degree (Bachelor)

Responsible Department: Computer Sciences

Academic year: 0

Semester: 2nd Semester

Teaching Languages: Hebrew

Campus: E. Safra

Course/Module Coordinator: Prof. Guy Kindler

Coordinator Email: michael.stahl@mail.huji.ac.il; shmuel.gershon@mail.huji.ac.il

Coordinator Office Hours: None. Contact the teacher via e-mail

Teaching Staff:

Mr. Stahl Michael,
Mr. Gershon Shmuel

Course/Module description:
Software Testing: Theory and Practice

SW testing is an integral part of software development. In companies that use agile development methods, developers are expected to be involved in test design and test execution. Moreover, the profession of Software Testing is increasingly accepted as a specialization branch of software development.

In this course, students will learn the basic terms and the theoretical background of software testing. The course includes practical exercises in class and as assignments.

Course/Module aims:
The course covers the following topics:
1. Basic principles and terms of SW testing
2. Static and dynamic test techniques
3. Unit testing
4. Reviews
5. Test automation
6. Additional topics (AI testing, test planning; exploratory testing; performance testing; bug reporting; etc.)

Learning outcomes - On successful completion of this module, students should be able to:
Upon successful completion of the course, students will be able to:

• Describe the basic principles of SW testing
• Explain the importance of SW testing in a project; how testing integrates with the development process and what does a SW tester do
• Perform functional analysis of software, define a test strategy and design tests for this software
• Define performance requirements and execute performance tests
• Build automated tests
• Effectively report bugs
• Write unit tests
• Review a document

Attendance requirements(%):
70%

Teaching arrangement and method of instruction: In-person (frontal) lecture covering theoretical content and sometimes in-class exercises.

Course/Module Content:
Basic testing principles
Reviews
Test Techniques
Static testing
Exploratory testing
Unit testing
Test automation
Various test types (AI, performance, security and more)
Test strategy and test planning
Test design
Testability

Required Reading:
Recommended reading list is published on the course's Moodle site.
The reading material is in English.

Additional Reading Material:

Grading Scheme:
Written Exam % 70
Submission assignments during the semester: Exercises / Essays / Audits / Reports / Forum / Simulation / others 18 %
Mid-terms exams 12 %

Additional information:
In the 2025 version we made modifications in an attempt to match the exercise load to the credit-points weight of this course.