LTAT.05.003
Software Engineering

Lecture 01.1:
Course Organization

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Fall 2019
Course Information/Overview

- Level: Bachelor’s level (in English)
- Credits: 6 ECTS
- Pre-requisite: MTAT.03.130 Object-oriented Programming
- Work load (per individual student): 156 person-hours in total
  - Lectures: $14 \times 2 = 28$ ph
  - Lab work (incl. independent work): $14 \times (2 + 5) = 98$ ph
  - Exam preparation: 30 ph
- Assessment:
  - 7 Lab Assignments / Tasks (team work) – 70% of grade
  - 1 Exam (written) – 30% of grade
- Grade scale: A (90%+), B (80%+), C (70%+), D (60%+), E (50%+), F
Letter Grades

A - An excellent performance, clearly outstanding. The student demonstrates excellent judgement and a high degree of independent thinking.

B - A very good performance. The student demonstrates sound judgement and a very good degree of independent thinking.

C - A good performance in most areas. The candidate demonstrates a reasonable degree of judgement and independent thinking in the most important areas.

D - A satisfactory performance, but with significant shortcomings. The candidate demonstrates a limited degree of judgement and independent thinking.

E - A performance that meets the minimum criteria, but no more. The candidate demonstrates a very limited degree of judgement and independent thinking.

F - A performance that does not meet the minimum academic criteria. The candidate demonstrates a lack of both judgement and independent thinking.
Student Feedback

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Course Objectives

• To obtain basic knowledge in software engineering and primary skills for working at any stage of software development projects.

Required pre-requisite:

• Compulsory: Object-oriented Programming (6 ECTS)

Related courses:

• Software Project (next year)
• Software Testing (next term)
• Web Application Development (in parallel)
• ...

That implies that we (I and the lab supervisors) take it for granted that you know the principles of object-oriented programming and how to program java code.
Schedule of Lectures (Tentative)

Week 01: Introduction to SE
Week 02: Requirements Engineering I
Week 03: Requirements Engineering II
Week 04: Analysis
Week 05: Development Infrastructure
Week 06: Continuous Development and Integration
Week 07: Architecture and Design I
Week 08: Architecture and Design II
Week 09: Verification and Validation I
Week 10: Verification and Validation II
Week 11: Refactoring (and TDD)
Week 12: Agile/Lean Methods
Week 13: Software Craftsmanship
Week 14: Course wrap-up, review and exam preparation
Week 15: Reserve time slot (no lecture scheduled as of today)
Recommended Literature (Readings)


  - Chapters 1-6 (selective)

(more literature is listed on the course wiki)
Software Engineering

Lectures: Fridays 10:15-12:00, Liivi 2-111
Coordinator and Lecturer: Dietmar Pfahl (dietmar.pfahl at ut dot ee)
Lab Sessions & Supervisors:
- Mondays 10:15-12:00, Liivi 2-202 (Lab Group 5: Siim Kütt)
- Mondays 10:15-12:00, Liivi 2-207 (Lab Group 6: Stanislav Bondarenko)
- Mondays 12:15-14:00, Liivi 2-122 (Lab Group 1: Siim Kütt)
- Mondays 12:15-14:00, Liivi 2-207 (Lab Group 9: Toomas Aleksander Veromann)
- Tuesdays 10:15-12:00, Liivi 2-207 (Lab Group 2: Stanislav Bondarenko)
- Tuesdays 10:15-12:00, Ullikool 17-218 (Lab Group 7: Yar Muhammad)
- Wednesdays 10:15-12:00, Liivi 2-224 (Lab Group 3: Yar Muhammad)
- Wednesdays 10:15-12:00, Liivi 2-404 (Lab Group 4: Ezequiel Scott)
- Thursdays 10:15-12:00, Liivi 2-207 (Lab Group 8: Yar Muhammad)
- Thursdays 10:15-12:00, Liivi 2-205 (Lab Group 10: Ezequiel Scott)

Course Outline: PDF
Exam Dates:
Project Topic: POS System
(POS: Point-of-Sale)
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(POS: Point-of-Sale)

Intro

• Congratulations, you are employed as an analyst by "Joostes Marss AS" company. During the first day at work you are informed that "Joostes Marss" got a new client who needs a new **POS system**. Your new boss is patting your shoulder and says that you are responsible for the project and become the lead analyst of the project.

Customer

• Your customer is the “Home Improvement International (HII)” company. This company is mostly dealing with the management of home improvement stores (Note: A home improvement store is something like K-rauta, Obi, Bauhof, Home Depot, ByggMax). Currently, the company has 22 stores in Estonia, Latvia, Lithuania and Poland. Your customer has ambitions to expand to 100 stores, and enter the markets of Finland, Sweden and Norway. The company's concept is to mostly sell retail products to private customers and to supply small construction companies with materials for their small and mid-size projects. Today, your customer is using a different POS software in their stores, which makes it expensive to maintain business processes across the company. The administration decided to replace their current POS software by a new software solution developed specifically for their needs.
Project = Team Work
Project Tasks (Labs)

- Week 01: no labs
- Weeks 02-03: Task 1: Requirements Gathering
- Weeks 04-05: Task 2: Requirements Specification, Modeling, Planning
- Weeks 06-07: Task 3: Development Environment
- Weeks 08-09: Task 4: Development - Phase I
- Weeks 10-11: Task 5: Development - Phase II
- Weeks 14-15: Task 7: Functional and Non-Functional Testing

Details can be found on the course wiki
Project Tasks (Labs)

- Week 01: no labs
- Weeks 02-03: Task 1: Requirements Gathering
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- Weeks 06-07: Task 3: Development Environment
- Weeks 08-09: Task 4: Development - Phase I
- Weeks 10-11: Task 5: Development - Phase II
- Weeks 14-15: Task 7: Functional and Non-Functional Testing

Details can be found on the course wiki
Difficulty (Labs)

Lab Assignment

1 2 3 4 5 6 7

High

Low

Team
Project Set-Up

Within each lab group (1 to 7), students are divided into **project teams of three**.

Each project team has a permanent lab instructor and a **fixed weekly lab time**.

Each project team gets 7 tasks, each task equaling a maximum of 10 grading points.

Submission of task solutions has **strict** deadlines.

**Penalties for late delivery** are as follows:
- up to 24 h late: -10%
- up to 7x24h late: -50%
- > 7x24h late: -100%
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* = submit before midnight of the day before Lab
Project Rules (1)

• Teams must deliver their solutions to their lab assistant using course development environment via repository on Bitbucket.

• Intermediate solutions must be presented/explained to the lab assistant by a randomly selected team member during assessment sessions.
  
  • It is important for the solution presenter to know every aspect of the solution and be able to explain them. If he/she needs help from other team members, they may jump in and help.

• During the assessment session teams have to be present with ALL their team members.
  
  • Rule 1: If no team member shows up, the team will get 0 marks for the homework assignment – no matter what is submitted in the end.
  
  • Rule 2: If team members appear but not sufficient work has been done, up to 30% penalty applies.
  
  • Rule 3: You must be at least in 5 assessment labs to not receive an individual penalty on the total amount of lab scores of your team.
Project Rules (2)

• Each team must complete all tasks independently.
  • This does not mean that you are not allowed to talk to other teams and discuss solutions.
  • Communication is a good thing and we welcome it.
  • However, copying the work of others, i.e., copying of code, is considered plagiarism and strongly prohibited (we have special software for automatic checks).
  • According to University rules, if we find evidence of plagiarism, we must inform the head of Institute and formal steps will be taken.

• If something in a homework task assignment is not clear to you, then you should ask for clarifications from your lab assistant.
  • If you detect that a task is unclear only during the night before the assessment your lab supervisor is most probably not available for answering questions. Also lab supervisors have the right of a private life!
Lab Instructors

Ezequiel Scott, PhD

Yar Muhammad, PhD

Stanislav Bondarenko

Siim-Alexander Kütt

Toomas Aleksander Veromann
Lab Instructors (1)

• **Ezequiel Scott** (ezequielscott@gmail.com):
  • Wednesdays 10:15-12:00, Liivi 2-404 (Lab Group 4)
  • Thursdays 10:15-12:00, Liivi 2-205 (Lab Group 10)

• **Yar Muhammad** (yar.muhammad@ut.ee):
  • Tuesdays 10:15-12:00, Ullikooli 17-218 (Lab Group 7)
  • Wednesdays 10:15-12:00, Liivi 2-224 (Lab Group 3)
  • Thursdays 10:15-12:00, Liivi 2-207 (Lab Group 8)
Lab Instructors (2)

• **Stanislav Bondarenko** (stanislav.bondarenko@ut.ee):
  • Mondays 10:15-12:00, Liivi 2-207 (Lab Group 6)
  • Tuesdays 10:15-12:00, Liivi 2-207 (Lab Group 2)

• **Siim-Alexander Kütt** (siim3214@gmail.com):
  • Mondays 10:15-12:00, Liivi 2-202 (Lab Group 5)
  • Mondays 12:15-14:00, Liivi 2-122 (Lab Group 1)

• **Toomas Aleksander Veromann**
  (ToomasAleksander.Veromann@nortal):
  • Mondays 12:15-14:00, Liivi 2-207 (Lab Group 9)
YOU WILL BE EVALUATED BY HOW WELL YOU HANDLE THIS THING.
Assessment (1)

- Labs – 70% of total grade
- Exam – 30% of total grade

Rules:
- All members in a team receive equal grades in labs
  - BUT: Exceptions from equal grade rule will be made, if individuals in a team don’t participate actively
- Team penalties apply for late delivery and if the whole team doesn’t show up in an assessment lab. → see course wiki for details
- Individual penalties apply for not attending assessment labs
- Don’t plagiarize!

Proposed Exam Dates:
- Exam 1: Wednesday, 08-Jan-2020 at 14:15-16:45 (limit: 110 students)
- Exam 2: Friday, 17-Jan-2020 at 14:15-16:45 (limit: 110 students)
- Re-take Exam: Monday, 27-Jan-2020 at 14:15-16:45
Assessment (2)

Labs – Practical Assessment

10 points per lab session. Total = 70 points.

If you get less than 30 out of 70 points in the practical assessment, you will get a grade of 'F' in your first examination (i.e., exam 1 || 2).

In this case, you will be given a second chance to improve your practical assessment score.

If your score after the improvement is at least 30 out of 70, you will become eligible for a retake exam (korduseksam).

Exam – Conceptual Assessment

The Conceptual Assessment will consist of an exam worth 30 points.

Students who get less than 10 out of 30 in this exam, will get a grade of 'F', regardless of their Practical Assessment score.

This same rule will apply for the retake exam (korduseksam).
GO TO LABS !!!!!
FORM PROJECT TEAMS!
Sign up to SLACK

(use the link distributed via email)
Communication Rules

- Message Board: Slack !!!
- Lab → Lab Instructors (Ezequiel, Yar, Toomas, Siim, and Stanislav)
  - If you encounter problems within a team (e.g., lack of communication or active participation of a team member) try to solve the problems first internally.
  - If that doesn't work (i.e. the team member repeatedly does not cooperate despite your attempts), notify your lab assistant and ask him for help to get the team back on track.
- Lecture/Exam → Dietmar
ASK QUESTIONS

(I will try my best to give satisfactory answers)