Modern Methods of Software Engineering

Introduction

Course info

Coordinator and lecturer

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Assignments and project responsible

- Amirhossein Layegh Kheirabadi (Course assistant)

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Lectures & Exercises:

see next slide

Written examination (4.5 p.)

October 20 at 14:00-18:00

Registration at least 21 days before exam period

Homework and project assignments (3 p.)

Schedule

- Allocation of lectures and tutorials to scheduled time-slots for meetings:
  - Lectures : August 25,26,27, September 2, 4, 9, 12, 15, 19, 23
  - HW Tutorials: September 3, 10, 17, 23, 24
  - Further changing of allocations can come but time-slots will not be changed

Homework

Start Date	Due Date	Description
2025-09-03	2025-09-10	Homework 1
2025-09-10	2025-09-17	Homework 2
2025-09-17	2025-09-23	Homework 3
2025-09-23	2025-10-01	Homework 4

It is assumed that the Homework are done by groups of 3 students

Quizzes

Must be done individually in the Icarus system

- https://eit.icarus.education/courses/introduction-to-software-engineering-methods/

(mini)Project

Aims of the project

- To get practice in Agile Programming approach

Your task

Apply some elements of Extreme programming approach to solving the problem of implementing a system

Provide an analysis and comparison of your experience to develop a code with analysis-design-implementation cycle and with XP approach

The project must be done by groups of 3 students

Homework and project bonus points

1. Delivering each homework and a project in due time gives 1 bonus point (this assumes that all Homework are approved). For approval, if in the case there were small problems in the solutions during discussion, we usually give maximum one week to reflect the changes and then the bonus is recorded.
2. For each Homework and project approval from the first attempt gives 1 bonus point.
3. In case of Late Submission of any Homework, No bonus points will be awarded for the "in-time submission of homework".
4. Passing all nine quizzes gives 7 bonus points (1p for registration at Icarus + 6 for passing all quizzes). See
   - https://eit.icarus.education/courses/introduction-to-software-engineering-methods/

ALL Bonus points are only valid for the first exam on October 20

Exam

- Learning outcomes based:
  - Formulate definitions of the main software engineering concepts and methods.
  - Evaluate and use the main concepts and methods within the area of software engineering.
- Different sets of questions
  - Set of questions which gives pass E
  - If E is fulfilled, then other hierarchical sets of questions will be given for getting D, C, B or A.

Course literature

- **Object-Oriented Software Engineering: Using UML, Patterns and Java: International Edition, 3/E**
  Bernd Bruegge, Allen H. Dutoit,
  ISBN-10: 0136061257, ISBN-13: 9780136061250 Publisher: Prentice Hall, Copyright: 2010, 800 pp Published: 07/29/2009
  Available online

Lecture notes

- **Additional articles in the curriculum can be added during the course**

Very Tentative Plan for Topics Discussion

	Date	Lecture
1	25.08.2025	Introduction
2	26.08.2025	Software Lifecycles,
3	27.08.2025	UML Basics
4	02.09.2025	Requirements Elicitation
5	04.09.2025	Requirements Analysis
6	09.09.2025	System Design
7	12.09.2025	Object Design (reuse)
8	15.09.2025	Object Design (Interface Design)
9	19.09.2025	Move to code, Testing
10	23.09.2025	Extreme Programming and other Agile methods

Objectives of this course?

- Learn about Software Engineering methods:
  - how to build complex software systems when the context frequently changes
- Learn methods for dealing with complexity and changes in software construction
- Be able to evaluate and choose methods for producing a high-quality software system
- Get technical knowledge and some managerial knowledge for software construction