Course Overview

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- ▶ Website: https://mechtaev.com
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- ▶ Research: Reliable AI for code
- ▶ Responsibilities: lectures, marking, organization.

- ▶ Responsibilities: Q&A, marking.

Course Website

`https://mechtaev.com/teaching/pku_softeng_25_26`

WeChat Group

► General, simple question

► Announcements

Q&A Sessions (Thursdays)

► In-depth discussions

► Individual questions

► Team collaboration

GitHub Classroom

► Questions about code

Create an issue, assign "jimbou" or "yihandai3826", provide a reference to a specific commit, reproduction instructions.

Problem-Based Learning

Development Process, DevOps

- ▶ Agile
- ▶ Version Control
- ▶ Packaging, Continuous Integration

Quality Assurance

- ▶ Unit Testing
- ▶ Property-based Testing
- ▶ Fuzzing, Symbolic Execution
- ▶ Debugging Techniques
- ▶ Error Handling

Software Design

- ▶ Modelling
- ▶ Abstraction Mechanisms in PL
- ▶ Design Principles
- ▶ Design Patterns

Advanced Topics

- ▶ AI for Software Engineering
- ▶ Automated Program Repair
- ▶ Static Analysis
- ▶ Dynamic Analysis
- ▶ Verification

★ Practice (most of) these topics in a group coursework project ★

Assessment scheme:

50% project (group)

30% marked based on automated tests
20% marked based on peer-review

20% 2-page report (individual)

marked by teaching staff

20% 2-page peer review (individual)

marked by teaching staff

10% presentation (individual)

marked by teaching staff

Deadlines:

10 March 2026, 4pm Group/presentation slot selection

2 June 2025, 4pm Code submission

12 June 2025, 4pm Code review & report submission