Software Quality Assurance

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The course is based on classical textbook on SQA, combined with introduction
to industry practices and up-to-date tools, sharing latest news and cases.

A real project will be used as example through the course.

Group discussion will be used for theory part while actual testing will be
performed for the pratice part. So, hoemwork will be discussion preparation
and test run.
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week 1: Preparation, Overview And Basics

- course introduction and preparation
    - coverage, requirement
    - teaching method
    - homework, discussion, exam
- Software Quality

- Software Quality Assurance
- Software Quality Engineering

week 2: Software Testing 1

- Testing: Concepts, Issues, and Techniques
- Test Activities, Management, and Automation

week 3: Software Testing 2

- Coverage and Usage Testing Based on Checklists and Partitions
- Input Domain Partitioning and Boundary Testing

week 4: Software Testing 3

- Coverage and Usage Testing Based on Finite-State Machines and Markov Chains
- Control Flow, Data Dependency, and Interaction Testing
- Testing Techniques: Adaptation, Specialization, and Integration

week 5: Quality Assurance 1

- Software Inspection

- Formal Verification

week 6: Quality Assurance 2

- Fault Tolerance and Failure Containment
- Comparing Quality Assurance Techniques and Activities

week 7: Quantifiable Quality Improvement

- Feedback Loop and Activities
- Quality Models and Measurements
- Defect Classification and Analysis
- Risk Identification for Quantifiable Quality Improvement

week 8：Software Reliability Engineering & etc

- Software Reliability Engineering
- QA for mobile apps and open source projects

References

- Software Quality Engineering, Jeff Tian
- Metrics and Models in Software Quality Engineering, Second Edition, Stephen H. Kan
- How Google Tests Software, James Whittacker, Jason Arbon, Jeff Carollo
- http://www.softwaretestinghelp.org/