Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
INF 536	Software Quality and Testing	1	3	0	0	3	6

Prerequisites	
Admission Requirements	

Language of Instruction	English
Course Type	Elective
Course Level	Masters Degree
Objective	The aim of this course is to integrate the concept of quality in each process step of a software, from requirement analysis to maintenance. First, quality assurance approaches and techniques that can be used throughout the whole process are learned. Basic theories related to the quality and test processes of software engineering are introduced and they are applied on examples and assignments. Software testing techniques, test flow and test process are explained. An individual or group-based project is carried out to ensure the use of all the theories learned throughout the semester.
Content	Week 1. Introduction to software testing and quality Week 2. Validation and verification, basic principles Week 3. Test and analysis activities Week 4. Finite models and data flow models Week 5. Test case selection Week 6. Functional testing Week 7. Partitioning the input domain and boundary testing Week 8. Combinatorial testing, structural testing Week 9. Midterm Week 10. Model-based testing, testing object-oriented software Week 11. Fault-based testing, test execution Week 12. Inspection, program analysis Week 13. System, acceptance and regression testing, automating analysis and test Week 14. Documenting analysis and test
References	M. Pezze, M. Young, Software Testing and Analysis: Process, Principles, and Techniques, John Wiley & Sons Inc, 2008. J. Tian, Software Quality Engineering: Testing, Quality Assurance, and Quantifiable Improvement, Wiley, 1st Edition, 2005. C. Fox, “Introduction to Software Engineering Design, Processes, Principles, and Patterns with UML2”, Addison-Wesley, 2006.

Theory Topics

Week	Weekly Contents
1	Introduction to software testing and quality
2	Validation and verification, basic principles
3	Test and analysis activities
4	Finite models and data flow models
5	Test case selection
6	Functional testing
7	Partitioning the input domain and boundary testing

Week	Weekly Contents
8	Combinatorial testing, structural testing
9	Midterm
10	Model-based testing, testing object-oriented software
11	Fault-based testing, test execution
12	Inspection, program analysis
13	System, acceptance and regression testing, automating analysis and test
14	Documenting analysis and test