

## **COURSE SYLLABUS**

### **Software Verification**

- Introduction to Software Testing & Formal Methods
- 2010 Spring

#### **BASIC INFORMATION**

Instructor: JUNBEOM YOO  
Office: New Millennium Bldg. Room 904  
Office Phone: 02-450-3258  
E-Mail: jbyoo@konkuk.ac.kr  
Homepage: <http://dslab.konkuk.ac.kr>  
Course Page: <http://dslab.konkuk.ac.kr/Class/2010/10SV/10SV.htm>  
Class Hours: 15:00 ~ 17:00 (Monday, 602), 11:30 ~ 13:30 (Tuesday, 602)

#### **DESCRIPTION**

This course introduces fundamentals of "software testing and analysis" theoretically. It is composed of two parts. The lab class (Monday) focuses on theories of formal methods and testing, and the lecture class (Tuesday) does on practice of software testing.

#### **COURSE ORGANIZATION**

This course is a lecture-lab course in which topics are presented by the instructor, and assigned practices are completed by students during the lab periods. Each group of 4 students performs a team project, and presents its progress.

#### **COURSE OBJECTIVE**

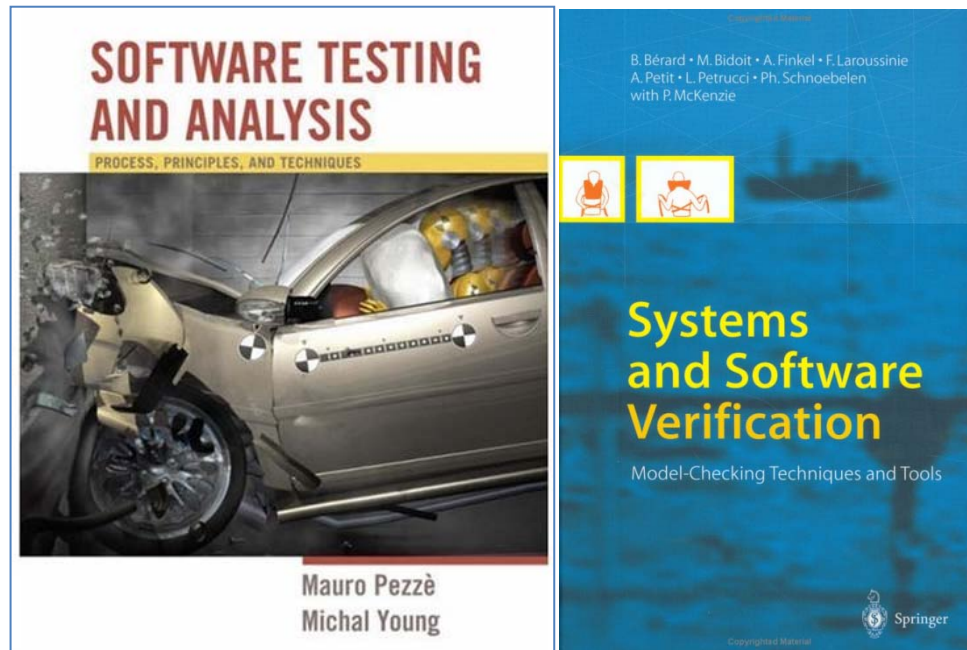
1. To introduce the fundamentals of software Testing and Analysis
2. To provide software testing and analysis experience using CASE tools.

#### **COURSE TOPICS**

1. Introduction to Software Testing (Theory)
2. Introduction to Formal Methods (Theory)
3. Practices for Formal Methods

## TEXT

1. Required Text: "Software Testing and Analysis" by Mauro Pezzè and Michal Young, WILEY
2. Auxiliary Text: "System and Software Verification" by B.Bérard, et. al., Springer



## GRADING PLAN

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|-------------------|-----|
| 1. Attendance     | 10% |
| 2. Mid-term Exam. | 30% |
| 3. Team Project   | 30% |
| 4. Final Exam.    | 30% |

## TENTATIVE SCHEDULE

WEEKS	DATE	LABORATORY (Monday)	LECTURE (Tuesday)
1	03.01 / 03.02	3.1절	Course Introduction
2	03.08 / 03.09	<a href="#">Chapter 1. Software Test and Analysis in a Nutshell (fig)</a>	(우리말 복습)
3	03.15 / 03.16	<a href="#">Chapter 2. A Framework for Test and Analysis</a> <a href="#">Chapter 3. Basic Principles</a>	Team Presentation #1 (JUnit , <a href="http://www.junit.org">http://www.junit.org</a> )
4	03.22 / 03.23	<a href="#">Chapter 4. Test and Analysis Activities Within a Software process</a>	(우리말 복습)
5	03.29 / 03.30	<a href="#">Chapter 5. Finite Models</a>	Team Presentation #2 (Eclipse TPTP , <a href="http://eclipse.org/tptp">http://eclipse.org/tptp</a> )
6	04.05 / 04.06	<a href="#">Chapter 6. Dependence and Data Flow Models</a>	(우리말 복습)
7	04.12 / 04.13	<a href="#">Chapter 8. Finite State Verification</a>	Team Presentation #3 (TestLink , <a href="http://www.teamst.org">http://www.teamst.org</a> )
8	04.19 / 04.20	중간고사	
9	04.26 / 04.27	<a href="#">Chapter 10. Functional Testing</a>	Introduction to Team Project
10	05.03 / 05.04	<a href="#">Chapter 11. Combinatorial Testing</a>	(우리말 복습)
11	05.10 / 05.11	<a href="#">Chapter 12. Structural Testing</a>	Team Presentation #4
12	05.17 / 05.18	<a href="#">Chapter 13. Data Flow Testing</a>	(우리말 복습)
13	05.24 / 05.25	<a href="#">Chapter 14. Model based Testing</a>	Team Presentation #5
14	05.31 / 06.01	<a href="#">Chapter 16. Fault based Testing</a> <a href="#">Chapter 17. Test Execution</a>	(우리말 복습)
15	06.07 / 06.08	<a href="#">Chapter 19. Program Analysis</a> <a href="#">Chapter 23 Automating Analysis and Test</a>	Course Summary
16	06.14 / 06.15	기말고사	