

# Syllabus

## Software Requirements Engineering

Course Name	Course type (credit/hours)		전선(3/3)		Course code	
	Target students Division/major/grade		컴퓨터공학과/		Opening semester	2017년 1학기
	Class time and classroom		월E(팔407) 수E(팔407)(팔407)			
Reference to this course	Related basic courses		Domain Modeling and Software Analysis, Software Engineering			
	Recommended concurrent courses					
	Related advanced courses		Advanced Software Engineering			
Instructor	Name (title/division)		이석원 (교수/소프트웨어융합학과)			
	Office Room Number	팔달관 603	Office phone Number	3548	e-mail	leesw@ajou.ac.kr
	Office hours			Homepage address	http://www.machinediscovery.com	
Teaching Assistant	Name (title/division)					
	Office Room Number	팔달관 913-1	Office phone Number	2442	e-mail	mytion7@ajou.ac.kr

### 1. Introduction

Topics include:

Requirements elicitation, specification, and validation; structural, informational, behavioral, security, privacy, and computer user interface requirements; scenario analysis; application of object-oriented methodologies in requirements gathering; spiral development models; risk management models; software engineering maturity model.

### 2. Course Objectives

\* State-of-the-art Requirements Engineering (RE) research: theory, practice, and applications : Definition, role and scope of RE in software and systems engineering, Current techniques, notations, processes and tools used in RE; Gain practical experiences in selected RE techniques such as VORD (i.e. through motivated class projects) and expose to innovative applications in real-world problems

\* Understand the essential interdisciplinary nature of RE : Breadth of skills needed for RE, and the many other disciplines on which it draws (i.e. knowledge engineering, information security/assurance, GIS); Contextual factors & practicalities that affect the success of various approaches to RE (i.e. problem solving, context-awareness issues)

\* Build a basic research background in RE : Methodological issues for RE research, Current research issues and the direction of the field, survey of the literature

### 3. Class types and activities

### 4. Teaching Method

Topics include:  
Requirements elicitation, specification, and validation; structural, informational, behavioral, security, privacy, and computer user interface requirements; scenario analysis; application of object-oriented methodologies in requirements gathering; spiral development models; risk management models; software engineering maturity model.

Project based RE practice:  
A student or a group of students will work on a RE project throughout the semester.  
The final report and the presentation (or a demo) are required.

### 5. Knowledge and ability required for taking this course

Basic knowledge on software engineering and its development process

Experiences in designing, developing and managing software product(project)

Document writing skills

Communication skills

### 6. Method of Evaluation

Evaluation Item	The Number of Times	Evaluation Proportion	Remarks
Attendance		10	
midterm exam		30	
final exam		30	
quiz			
presentation			
discussion			
homework		30	
etc			

Grading Policies:  
 Midterm: 30%  
 Final exam: 30%  
 Attendance and Class Discussion: 10%  
 Team Project: 30%  
   – Project Proposal/ Literature Survey  
   – Final Project Report/ Presentation/ Demonstration  
 Ph.D. students will have additional assignment requirements.

## 7. Textbooks

Main/Sub	Title	Writer	Publisher	Publication year
참고자료	Software Requirements and Specification: a lexicon of practice, principles and prejudices	Michael Jackson,	Addison–Wesley	1995
참고자료	Requirements Engineering: Processes and Techniques	Gerald Kotonya, Ian Sommerville,	John Wiley & Sons.	1998
참고자료	Requirements Engineering: From System Goals to UML Models to Software Specifications	Axel van Lamsweerde	Wiley	2009

## 8. Lecture Schedule

Week	Lecture contents	Lesson type	Remark
1	Course Orientation & Introduction to Requirements Engineering	lecture	
2	Introduction to Requirements Engineering	lecture	
3	Requirements Engineering Process & Basics	lecture	
4	RE Process Part 1 – Requirements Elicitation and Analysis	lecture	
5	RE Process Part 2 – Methods for Requirements Engineering – Modeling and Analyzing Requirements (modeling, communications, agreement, verification & validation)	lecture	
6	Goal-based Requirements Methods	lecture	
7	Scenario based Methods	lecture	
8	Viewpoints-oriented Requirements Methods	lecture	
9	Midterm		
10	Non-functional Requirements	lecture	
11	Interactive System Specification	lecture	
12	Requirements Management – Managing change and inconsistency	lecture	
13	Ontologies in Requirements Engineering	lecture	

## 8. Lecture Schedule

Week	Lecture contents	Lesson type	Remark
14	Early Aspects in Requirements Engineering	lecture	
15	Security Requirements Engineering	lecture	
16	Project presentation		
17	Project presentation		

## 9. Others

### Online Resources:

- Requirements Engineering Journal, Springer-Verlag
- Requirements Engineering books reviews by I. Alexander
- Requirements Engineering Specialist Group in UK
- IFIP Working Group 2.9 on Requirements Engineering
- INCOSE Requirements Engineering Group
- Requirements Engineering resources from the IEEE Task Force on RE
- RE On-line mailing list

### Special Notes:

- 1.Academic dishonesty, in any form, will not be tolerated. Cheating, copying parts or whole papers/programs, or complicity in any violations of the student academic integrity code will result in prompt action on my part in accordance with the procedures outlined in the Ajou Univ. Code of Student Academic Integrity. See a more detailed statement at the end of this syllabus.
- 2.You are responsible for class absences. Attendance is mandatory for all class meetings. Three to four unexcused absences results in the loss of a letter grade; more than four unexcused absences will result in the automatic failure of the course.
- 3.Please let instructor know the need, when feasible, to flexibly accommodate student observances of the holy days of all religious denominations.
- 4.Late policy: Any assignments should be submitted BEFORE the class on the due dates. In case of late submission due to unavoidable circumstances, students should obtain permission from the instructor ahead of the deadline. Late submissions will result in a 10% penalty per day.
- 5.No early or make-up exams. No exception