

1. Course Title (Course Code)

Information System Architectures (2294)

2. Instructor

Teruhiko Hiraishi

3. Term

Fall 2 (M2 students only)

4. Outline and Objectives

Comprehend all the processes of information systems development, and intend the students to master the processes from upstream requirements definition to systems architecture design.

5. Goals (Attainment Targets)

- (1). To be able to explain all the processes for systems developments.
- (2). To be able to comprehend the purpose and method of requirement definition, and to analyze the requirements.
- (3). To be able to develop the requirement definition documents.
- (4). To be able to understand the importance of the systems architecture and to be able to develop the systems architecture.

6. Correspondence relationship between Educational goals and Course goals

Educational goals			Course goals
High level ICT skill	Basic academic skills		(1)
	Specialized knowledge and literacy		(2), (3), (4)
Human skill (Tankyu skill)	Ability to continually improve own strengths		(2)
	Ability to discover and resolve the problem in society	Problem setting	(2)
		Hypothesis planning	(2), (3)
		Hypothesis testing	(2), (3)
		Practice	(3), (4)
	Fundamental Competencies for Working Persons	Ability to step forward	(3), (4)
		Ability to think through	(2), (3)
		Ability to work in a team	(2), (3), (4)
Professional ethics			

7. Course Requirements

None.

8. Textbooks

None.

9. Reference Books

N.Rozanski,E.Woods,
"Software Systems Architecture: Working with Stakeholders Using Viewpoints and Perspectives",2014

10. Evaluation

Goals	Evaluation method & point					
	term-end exam	quiz	report	presentation	deliverable	other
(1)	○					
(2)	○					
(3)	○		○	○		
(4)	○		○	○		
Allocation	40		20	40		

11. Notes

This course is intended not only the students to learn the theoretical concept but also by thinking themselves, by acting, and by experiencing, acquiring the applied skill. So through the team discussions and project management case-study, this course intends to improve the students' not only the practical ability, but also the communication, action assignment, presentation abilities.

Course Schedule

(Notice) This schedule is a tentative plan; there might be changes, additions, and revisions etc. at the time of delivering the course.

Lesson 1: Orientation

(lecture, 90 min.)

Comprehend the outline of the course.

- (1) Orientation
- (2) What is the architecture?
- (3) Flow of the development processes

Lesson 2: Outline of the requirements development

(lecture, 90 min.)

Comprehend the requirements development

- (1) What is the requirements development?
- (2) Processes of the requirements development.

Lesson 3: Outline of the RFP

(lecture , 90 min.)

Comprehend the RFP(Requirements for Proposal)

- (1) What is the RFP?
- (2) Comprehend the RFP

Lesson 4: Case study

(lecture & practice , 90 min.)

Read the case study, and through the interview to the acquirer, comprehend the contents.

- (1) Description of the case study.
- (2) Interview and comprehending the case study.
- (3) Extract the problems in the organization.
- (4) Clarify the purpose of the system by developing the structure diagram.

Lesson 5: Organizing the requirements

(lecture & practice , 90 min.)

Identify the stakeholders for the case study

- (1) Extract the related stakeholders
- (2) Structuring the stakeholders
- (3) Develop the requirement organization sheet

Lesson 6: Modeling the requirements

(lecture & practice , 90 min.)

Modeling the requirements using the UML(Unified Modeling Language) form requirements organize sheet.

- (1) What is the UML?
- (2) Modeling of the requirements: use case diagram and activity diagram
- (3) Develop the use case diagram and activity diagram.

Lesson 7: Extracting the functional and non-functional requirements**(lecture& practice , 90 min.)**

Using requirements organization sheet, extract the functional and non-functional requirements.

- (1) What is the functional and non-functional requirements?
- (2) Extracting the functional and non-functional requirements.

Lesson 8: Developing the requirement definition document**(practice , 90 min)**

After summarizing the purpose of the system, requirements organization, and modeling, develop the requirements definition document.

- (1) Develop the requirements definition document

Lesson 9: Presentation of the requirement definition document**(practice, 90 min.)**

Make a presentation on the outcome(requirements definition document).

- (1) Make a presentation on the requirements definition document.
- (2) Review on the requirement definition document.

Lesson 10: Modeling the system architecture**(lecture & practice , 90 min.)**

Understand the method of developing the system architecture and develop the system architecture.

- (1) What is the the modeling of the system architecture?
- (2) Method of the modeling the system architecture.

Lesson 11 - 14: Developing the system architecture**(practice , 360 min.)**

Using functional and non-functional requirements, develop the system architecture.

- (1) Develop the system architecture.

Lesson 15: Making a presentation of the system architecture**(practice , 90 min.)**

Make a presentation for the developed system architecture.

- (1) Make a presentation for the developed system architecture.

Lesson 16: Evaluation and confirmation of understanding**(exam, 90 min.)**

※ The final exam, in order to determine whether students have reached the learning objectives.