1. Course Code

2293

2. Course Title

Software Development Experiments

3. Teacher

WANNOUS, Muhammad

4. Term

Fall 1

5. Course Overview and Objectives

This course includes a number of exercises that require the students to use the skills and knowledge they acquired to complete. For each exercise, a problem description is provided and every student is required to design, prototype, and test a solution. At the end, the students, in groups or individually, will have to work on a system that involves all the prototypes developed in the earlier exercises.
This course DOES NOT include lecture slides, the lecture time will be spent on developing the requirements and writing code. Each student is required to complete both desktop and web applications in the programming language he/she is comfortable with.

6. Course Goals (Attainment Targets)

(1) Examine a description provided to develop an application.

(2) Formulate a number of requirements based on the description

(3) Propose a design for the solution system

(4) Decide the best technologies for implementation

(5) Use the requirement document and the different technologies to implement the parts of the solutions system

(6) Experiment with the of the solution system

7. Correspondence relationship between Educational goals and Course goals

Educational goals of the school			Course Goals
High level ICT skills	Basic academic skills		(1) (2) (3)
	Specialized knowledge and literacy		(4) (5) (6)
Human skill (Tankyu skill)	Ability to continually improve own strengths		
	Ability to discover and resolve the problem in society	Problem setting	
		Hypothesis planning	
		Hypothesis testing	
		Practice	
	Fundamental Competencies for Working Persons	Ability to step forward	
		Ability to think through	
		Ability to work in a team	
Professional ethics			

8. Course Requirements (Courses / Knowledge prerequisite for this course)

Programming (Java), database systems, and web application development skills are required. The following courses are required to be completed.
[1] Advanced Software Development (Cloud Computing)
[2] Fundamentals of Software Engineering

9. Textbooks (Required Books for this course)

For this course, a set of lecture slides, handouts,and other resources will be distributed in timely manner through Moodle.

10. Reference Books (optional books for further study)

None

11. Evaluation

Goals	Evaluation method & point allocation					
	examination	Quiz	Reports	Presentation	Deliverables	Other
(1)					○	
(2)					○	
(3)					○	
(4)					○	
(5)					○	
(6)					○	
Allocation					100	

12. Notes

This course mainly contains practical parts. Be prepared for using Integrated Development Environment and for coding (in Java).
Exercises have deadlines and they won't be postponed unless a serious issue occurs.

13. Course plan

(Notice) This plan is tentative and might be changed at the time of delivery

Lesson 1: (Course orientation, exercises) (Discussion and Lecture 90 minutes)

[1] Course syllabus
[2] Grading
[3] The exercises covered in the course

Lesson 2: (Sample exercise - count-length chart) (Discussion & Groupwork 90 minutes)

[1] Read the description.
[2] Writing the requirements.
[3] Developing the evaluation plan.

Lessons 3-4: (Sample exercise - count-length chart)	(Coding session 180 minutes)

[1] The main functions of the solution system
[2] An initial design for the solution system
[3] Evaluation.

Lesson 5: (Exercise-1: QR-Code reader and generator)	(Discussion & Groupwork 90 minutes)

[1] Read the description.
[2] Writing the requirements.
[3] Developing the evaluation plan.

Lesson 6-8: (Exercise-1: QR-Code reader and generator)	(Coding session 270 minutes)

[1] The main functions of the solution system
[2] An initial design for the solution system
[3] Evaluation.

Lesson 9: (Exercise-2: OCR reader)	(Discussion & Groupwork 90 minutes)

[1] Read the description.
[2] Writing the requirements.
[3] Developing the evaluation plan.

Lesson 10-14: (Exercise-2: OCR reader)	(Coding session 450 minutes)

[1] The main functions of the solution system
[2] An initial design for the solution system
[3] Evaluation.

Lesson 15: (Exercise-3: Obtaining coordinates (long/lat) from an image)	(Discussion & Groupwork 90 minutes)

[1] Read the description.
[2] Writing the requirements.
[3] Developing the evaluation plan.

Lesson 16-17: (Exercise-3: Obtaining coordinates (long/lat) from an image)	(Coding session 180 minutes)

[1] The main functions of the solution system
[2] An initial design for the solution system
[3] Evaluation.

Lesson 18: (Exercise-4: File uploading and saving in a DB (WEB Application))	(Discussion & Groupwork 90 minutes)

[1] Read the description.
[2] Writing the requirements.
[3] Developing the evaluation plan.

Lesson 19-22: (Exercise-4: File uploading and saving in a DB (WEB Application))	(Coding session 360 minutes)

[1] The main functions of the solution system
[2] An initial design for the solution system
[3] Evaluation.

Lesson 23 : (Exercise-5: WeBill)	(Discussion & Groupwork 90 minutes)

[1] Read the description.
[2] Writing the requirements.
[3] Developing the evaluation plan.

Lesson 24-28 : (Exercise-5: WeBill)	(Coding session 360 minutes)

[1] The main functions of the solution system
[2] An initial design for the solution system
[3] Combining the existing modules
[4] Evaluation.

Lesson 28-32 : (Enhancements to WeBill)	(Coding session 360 minutes)

Starting from this session, the students will be divided into groups to work on a selected number of additional features in WeBill.
Each group is required to select a set of features to add to the application (the number of new features increases with the number of group members). A list of the new features will be provided in the classroom.
