

**1. Course Code**

2200

**2. Course Title**

Engineering Ethics

**3. Teacher**

Mamoru ITO

**4. Term and Schedule**

S1 Wed 1~2

**5. Course Overview and Objectives**

This course is intended to provide an opportunity to explore the concepts and practices of engineering ethics in modern society for the graduate students with various backgrounds. Studying and understanding engineering ethics is a part of personal development as an engineer. This class will improve students' thinking skills on engineering ethics through class discussions.

**6. Course Goals (Attainment Targets)**

- (1) Students will have an understanding of professional and ethical responsibility.
- (2) Students will recognize the nature of dilemmas and challenges in organizations.
- (3) Students will have knowledge of contemporary and global issues.
- (4) Students will improve their ability to analyze ethical cases.
- (5) Students will be able to make ethical judgments and take appropriate actions.
- (6) Students will notice the need for lifelong learning regarding their profession.

**7. Correspondence relationship between Educational goals and Course goals**

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

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

None

**9. Textbooks (Books required to have to take this course)**

None

**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	30	25	25	10	10	

## 12. Notes

The lecture materials will be provided during the course.

## 13. Course plan

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

---

Lesson 1: Professional Ethics Lecture/Discussion 90 min

---

This course focuses on professional ethics, not personal ethics or common morality. Professional ethics has several aspects that distinguish it from personal ethics and common morality.

- Introduction
- Engineering and professionalism
- Models of professionalism and types of ethics/morality
- Preventive ethics and aspirational ethics

---

Lesson 2: Responsibility in Engineering Lecture/Discussion 90 min

---

Responsibility is deeply related to accountability, both for what an engineer does in the present and future and for what an engineer has done in the past.

- Engineering standards
- The standard of care
- Design standards

---

Lesson 3: Technology and Society Lecture/Discussion 90 min

---

Engineers should take an essential angle toward technology, appreciating and taking pride in its advantages whereas being awake to the issues it will produce.

- Thinking about technology and society
- The promise and perils of technology
- Influence of computer technology

---

Lesson 4: Trust and Reliability Lecture/Discussion 90 min

---

This lesson focuses on issues regarding the importance of trustworthiness in engineers: honesty, confidentiality, intellectual property, witnessing by experts, public communication, and conflicts of interest.

- Honesty
  - Confidentiality
  - Intellectual property
-

---

Lesson 5: Risk and Liability in Engineering Lecture/Discussion 90 min

---

Risk is the product of the probability and magnitude of harm for engineers. They have to guard themselves against unjust legal responsibility for harm to danger while additionally defending the public from risk.

- Different approaches to risk
- Communicating risk and public policy
- Engineer's liability for risk

---

Lesson 6: Engineers in Organizations Lecture/Discussion 90 min

---

Engineers and managers have different perspectives, both of which are legitimate, and it's beneficial to distinguish between decisions made by managers and decisions made by engineers.

- Engineers and managers
- Being morally responsible in an organization
- Proper engineering and management decisions

---

Lesson 7: Engineers and the Environment Lecture/Discussion 90 min

---

Rules for engineers are increasingly including provisions about the environment, but their implications for many environmental issues are not clear.

- Criteria for a clean environment
- Go beyond the law
- Respect for nature

---

Lesson 8: Global Issues Lecture/Discussion 90 min

---

We live in an age when social changes have been taking place more rapidly than at any time in the past. The scale and range of projects undertaken have greatly increased over those undertaken in previous centuries.

- Globalization
- Cross-cultural issues
- Work in an international society

---

Lesson 9: Case Study 1 Discussion 90 min

---

Analysis of case examples will be carried out through classroom discussions.

---

Lesson 10: Case Study 2 Discussion 90 min

---

Analysis of case examples will be carried out through classroom discussions.

---

---

Lesson 11: Case Study 3

Discussion 90 min

---

Analysis of case examples will be carried out through classroom discussions.

---

Lesson 12: Case Study 4

Discussion 90 min

---

Analysis of case examples will be carried out through classroom discussions.

---

Lesson 13: Classroom Exercise 1

Exercise 90 min

---

Discussions and case study exercises will be conducted in groups.

---

Lesson 14: Classroom Exercise 2

Exercise 90 min

---

Discussions and case study exercises will be conducted in groups.

---

Lesson 15: Presentation

Presentation 90 min

---

The results of the exercises will be presented in groups.

---

Lesson 16: Term-End Exam

Examination 90 min

---

A term-end exam will be conducted in order to evaluate the degree of comprehension of each student.

---

**1. Course Code**

2201

**2. Course Title**

Fundamentals of Information Networks

**3. Teacher**

Hisato SHIMA

**4. Term and Schedule**

F2 Wed 3~4

**5. Course Overview and Objectives**

In this course, students learn concepts, schemes, features, structures and behaviors of information communication networks. Learn the protocols from the physical layer, the network layer, the transport layer, and the application layer, and understand how the Internet and network applications are working.

**6. Course Goals (Attainment Targets)**

- (1) Can explain the mechanism of the each layers of TCP / IP protocol.
- (2) Can explain the functions of various network devices.
- (3) Can explain the domain name and DNS, HTTP and web server mechanism
- (4) Can research and present network technology by group.
- (5)
- (6)

**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		
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		(4)	
	Ability to work in a team	(4)	
Professional ethics			

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

It is recommended to have taken Foundations of Computer Systems

**9. Textbooks (Books required to have to take this course)**

None

**10. Reference Books (optional books for further study)**

Title: Computer Networking: A Top-Down Approach

Author: James F. Kurose, Keith W. Ross

## 11. Evaluation

Goals	Evaluation method & point allocation					
	examination	Quiz	Reports	Presentation	Deliverables	Other
(1)		○		○		
(2)		○		○		
(3)		○		○		
(4)				○		
(5)						
(6)						
Allocation		70		30		

## 12. Notes

## 13. Course plan

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

---

Lesson 1: Overview of Information network (Lecture 90min.)

---

Overview of this course and various technologies to communicate information.

1. Information communication technologies and information network
2. Course logistics (learning goal, grade evaluation, etc.)
3. Digitalizing various information

---

Lesson 2: Foundation of Information Network (Lecture 90min.)

---

Foundation of information communication technologies are explained

1. Multiplexing and transmission control scheme
2. Circuit switching and packet switching
3. Layered structure of communication protocols
4. Presentation Skill

---

Lesson 3: Connecting Devices: Physical Layer (Lecture 90min.)

---

Learn about various physical layer technologies used in Internet

1. Functions of physical layer
2. Ethernet
3. Wireless LAN
4. Cellular Network

---

Lesson 4: Connecting Devices: Link Layer (Lecture 90min.)

---

Understand the address, frame and switches used in Link Layer.

1. MAC address and Ethernet frame
  2. Hub and switch operation
  3. Advanced Functions of Link Layer
-

---

## Lesson 5: Connecting to world: Network Layer

(Lecture 90min.)

---

Network layer and IP(Internet Protocol) connect the networks.

1. What is the network layer (Internet layer)
2. Internet Protocol (IP)
3. IP packet and IP address
4. Network address and host address

---

## Lesson 6: Addressing devices: IP address

(Lecture 90min.)

---

Understand how the Internet IP address is used.

1. Structure of IP Address
2. Global IP address allocation
3. Private IP address
4. Conversion of IP address to MAC address

---

## Lesson 7: Delivering Packets (Routing)

(Lecture 90min.)

---

Understand how the packets are delivered to equipments

1. Routing control and Default gateway
2. Setting IP address (DHCP)
3. VPN (Vertical Private Network)
4. Summary of data link layer and network layer

---

## Lesson 8: IPv6

(Lecture 90min.)

---

IPv6, the next generation network technology, is explained

1. Background of the deployment of IPv6
2. IPv6 address and packet structure
3. Transition to IPv6

---

## Lesson 9: ICMP and UDP (Transport Layer)

(Lecture 90min.)

---

Understand ICMP and transport layer UDP functions.

1. ICMP, ICMPv6
2. Transport layer and session
3. UDP (User Datagram Protocol)

---

## Lesson 10: Reliable Session : TCP (Transport Layer)

(Lecture 90min.)

---

The function and behavior of TCP(Transmission Control Protocol)

1. TCP Basics and Connection Procedure
  2. Data transfer usint TCP
  3. TCP flow control and congestion control
  4. NAT/NAPT
-

---

Lesson 11: World Wide Web (Application Layer) (Lecture 90min.)

---

The basic mechanism of WWW (World Wide Web) widely used on the Internet.

1. Application layer
2. URL and domain name
3. How name resolution (DNS) works
4. HTTP protocol

---

Lesson 12: More on WWW and Security (Application Layer) (Lecture 90min.)

---

Advanced Web mechanism and its security.

1. Dynamic Web
2. Cookie
3. HTTP Proxy
4. HTTPS on SSL / TLS

---

Lesson 13-14 Student Presentation (Presentation 180min.)

---

Groups of Student select a theme related to network applications, research about it, and present the results.

---

Lesson 15: Summary of Information Networks (Lecture 90min.)

---

Review and Summary of what you have learn in this course.

---



**1. Course Code**

2202

**2. Course Title**

Fundamentals of Open Source Software

**3. Teacher**

Sandor Markon

**4. Term and Schedule**

F1 Sat 3~4

**5. Course Overview and Objectives**

Open Source Software is becoming an important resource for development, especially in developing countries. A working understanding of the economical and technical background of the Free / Open Source Software movement (FOSS) is essential for its effective use. ICT innovators need an active knowledge of the available FOSS resources, including hosting sites, projects, communities, legal frameworks, organizations etc.

**6. Course Goals (Attainment Targets)**

- (1) Can identify the licensing of open source systems and make decisions on their use, based on an understanding of the legal, economical and technical issues.
- (2) Can find open source projects related to a given development problem.
- (3) Can install from source code an open source project and start using it.
- (4) Can choose the correct license, development model, and development community for open source projects, and can initiate a new project or join an existing project.
- (5) Can use the major development platforms and tools that are common for open source projects.
- (6) Experience participating in a public open source project.

**7. Correspondence relationship between Educational goals and Course goals**

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

**8. Course Requirements (Courses / Knowledge prerequisite for this course)****9. Textbooks (Books required to have to take this course)**

None. This course uses only material freely available on the Internet (links will be provided on Moodle).

**10. Reference Books (optional books for further study)**

## 11. Evaluation

Goals	Evaluation method & point allocation					
	examination	Quiz	Reports	Presentation	Deliverables	Other
(1)			○			
(2)				○	○	
(3)				○	○	
(4)				○	○	
(5)			○			
(6)				○	○	
Allocation			40	30	30	

## 12. Notes

## 13. Course plan

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

---

Lesson 1: Orientation, introduction, motivation (discussion and demonstration, 90 min)

---

Students will be engaged in a discussion about their perception and understanding of Open Source Software issues. We review the areas that are to be covered in the course, and identify common issues of importance. A sample Open Source Software project is reviewed, we install and test it together as a starting reference point for the course.

---

Lesson 2: History, background, current status (lecture, discussion, 90 min)

---

We discuss the emergence of Free Software and Open Source Software movements, using examples and practical issues, some of them from personal experience. We then review how OSS is being used now, discuss areas of success and failure, trends, outlook.

---

Lesson 3: Where are the projects? (discussion and demonstration, 90 min)

---

We review OSS repositories and development organizations, with emphasis on finding projects and resources relevant to a given development task. Students choose together a topic of common interest and we explore OSS repositories to find resources for it.

---

Lesson 4: Legal and social issues (lecture, discussion, 90 min)

---

Starting with the concepts of copyrights and patents for software, we discuss issues like protecting creative work, building up common foundations of culture, freedom of creation and expression, the dilemma of sharing or exclusivity, motivations for contributing etc. Common licensing models for OSS projects will be reviewed and discussed from the point of view of practical consequences of choices for licensing, both for the developer and the user.

---

---

Lesson 5: Business issues

(lecture, discussion, 90 min)

---

How to make money out of free software? We discuss business models for companies, developers and users, including OSS-oriented IT companies, manufacturers developing OSS components for their physical products, service providers, independent consultants and others.

---

Lesson 6: Technical foundations of OSS 1.

(lecture, exercises, 90 min)

---

Some of the important coding conventions and development methodologies of OSS development are explored using examples from Apache and the Linux kernel. We cover the use of version control systems, bug reporting, release control, project organization, developer and user forums.

---

Lesson 7: Technical foundations of OSS 2.

(lecture, exercises, 90 min)

---

We review some major development languages, libraries and frameworks that are commonly used in OSS projects. We look at the source code of Apache as an example, discussing issues like naming, commenting, structuring.

---

Lesson 8: Using OSS 1.

(group work, 90 min)

---

Students form working groups, each of which selects a development topic to be solved using OSS. Each group creates a Tankyu chart, setting up a hypothesis for solving the issue, and a plan for finding OSS resources.

---

Lesson 9: Using OSS 2.

(group work and discussion, 90 min)

---

Each group presents their plan and findings, to be reviewed by the class. Points to be checked include relevance of the resources to the problem, maturity of the OSS projects, practical usability of the current release, and the feasibility of joining and adapting the projects.

---

Lesson 10: Everyday OSS

(demonstration and discussion, 90 min)

---

We discuss living with Android, Linux, LibreOffice, Chrome, Thunderbird, and other OSS components, without requiring any non-free software. Who can and who cannot leave the commercial software world? Can a company, a school, a government office, a grandmother standardize on OSS? What are the missing pieces? What are the advantages and pitfalls? What is coming in the near future? How can we contribute?

---

---

Lesson 11: Using OSS 3.

(group work, 90 min)

---

Final presentation of the “Using OSS” project.

---

Lesson 12: Developing OSS 1.

(group work, 90 min)

---

The groups select a development topic (might be the same as the “Using OSS” project) that requires a new OSS project for solution. Each group sets up a new OSS project at SourceForge, GoogleCode or another hub and starts development.

---

Lesson 13: Developing OSS 2.

(group work, 90 min)

---

The groups present their status, discussing progress and issues that they have encountered.

---

Lesson 14: Developing OSS 3.

(group work, 90 min)

---

Final presentation of the “Developing OSS” projects.

---

Lesson 15: (enter lesson title)

(discussion, 90 min)

---

Based on what we have learned in the course, we discuss what each student will do using OSS during their studies and after graduating. We also review the impact of OSS on our countries and the society, and discuss what we can do to contribute.

---

**1. Course Code**

2205

**2. Course Title**

Fundamentals of Database Systems

**3. Teacher**

Muhammad WANNOUS, Ph.D.

**4. Term and Schedule**

F2 Tue 1~2

**5. Course Overview and Objectives**

This course covers database design and use in applications. It does NOT cover the design of database engines. The course begins with a description of the relational model and continues to cover SQL statements. There will be a programming project which covers database design, management, and utilizations. In this projects students show the skills they acquired in the course. SQLite (<http://sqlite.org/>) is the database engine accompanying this course. It has been selected for its ease of installation, popularity, and support for different platforms.

**6. Course Goals (Attainment Targets)**

- (1) Define a 'database', a 'database management system', and database structure.
- (2) Describe a relational database model and SQL syntax
- (3) Use the relational model in designing a database
- (4) Apply the design using a database engine
- (5) Practice using the SQL syntax through the command line
- (6) Practice using the SQL syntax through an application

**7. Correspondence relationship between Educational goals and Course goals**

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

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

This course requires command-line and programming skills. Students are recommended to take this course after 'Foundations of Computer Systems' (2206).

Command-line tools in addition to GUI tools are used in this course. The programming project is in Java, but you can use any other programming language that you are comfortable with.

**9. Textbooks (Books required to have to take this course)**

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

**10. Reference Books (optional books for further study)**

Getting Started with SQL: A Hand-on Approach for Beginners, Thomas Nield  
 , 1491938617  
 MySQL, 5th Ed., Paul DuBois, 9780321833877

## 11. Evaluation

Goals	Evaluation method & point allocation					
	examination	Quiz	Reports	Presentation	Deliverables	Other
(1)		○				
(2)		○				
(3)		○				
(4)					○	
(5)					○	
(6)					○	
Allocation		40			60	

## 12. Notes

This course contains both theoretical and practical parts. Be prepared for using the shell interface and for coding.

Quizzes and projects 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, Introduction to database) (Discussion and Lecture, 90 minutes)

---

[1] Course syllabus

[2] Grading

[3] Introduction to SQL

+ What is a database?

+ What is a table?

+ What data types can be set?

+ What is a schema?

+ What is a key?

---

Lesson 2: (Database types)

(Lecture 45 minutes,  
Practice 45 minutes)

---

[1] Centralized and lightweight databases

[2] Relational database

[3] SQLite {SQLite Studio}

+ Installation.

+ Creating a db.

---

Lesson 3: (Basic SQL)

(Lecture 45 minutes,  
Practice 45 minutes)

---

[1] Queries

+ Data retrieval.

+ Filtering.

+ Grouping records.

---

Lesson 4: (Database design)

(Lecture 45 minutes,  
Practice 45 minutes)

---

[1] Database entities

[2] Relations

---

Lesson 5: (Database design)

(Lecture 45 minutes,  
Practice 45 minutes)

---

[1] Entity Relation Diagram (ERD)

+ Multi relations

---

Lesson 6: (Database Creation)	(Lecture 45 minutes, Practice 45 minutes)
[1] Converting an ERD to a database + Creating database. + Creating tables. + Primary and foreign Keys.	
Lesson 7: (Managing data)	(Lecture 45 minutes, Practice 45 minutes)
[1] Insert [2] Delete [3] Truncate table [4] Drop table [5] Joining tables	
Lesson 8: (Review)	(Discussion, 90 minutes)
Review of the course.	
Lesson 9 : (Indexing)	(Lecture 45 minutes, Practice 45 minutes)
[1] Indexes + Creating indexes + Performance	
Lesson 10 : Connecting to database from applications)	(Lecture 30 minutes, Practice 60 minutes)
[1] Database connector + JDBC [2] Execute SQL statements.	
Lesson 11 : (Project work)	(Discussion and lab work, 90 minutes)
[1] Work on a sample project to design and create a database + Use ERD to design a database for the students, teachers, and courses	
Lesson 12 : (Project work)	(Discussion and lab work, 90 minutes)
[1] Create the database for the sample project. [2] Import data into the database.	
Lesson 13 : (Project work)	(Discussion and lab work, 90 minutes)
[1] Design an application to manage the database of the sample project + Use SQLite to create the database. + Use Java for writing the application to manage the database.	
Lesson 14 : (Project work)	(Discussion and lab work, 90 minutes)
[1] Continue working on the application for the sample project.	

---

Lesson 15 : (Wrap up)

(Discussion, 90 minutes)

---

[1] Discuss and review the topics covered in this course.

[2] Suggestions of improvements.

---



**1. Course Code**

2206

**2. Course Title**

Foundations of Computer Systems

**3. Teacher**

Yukinobu MIYAMOTO

**4. Term and Schedule**

F1 Wed 1~2

**5. Course Overview and Objectives**

The premise of this course is to introduce students to the foundations of computer systems, including Structure of Computers, Computer Hardware, Software and Computer Networks. This course is designed to give broad knowledge of computer systems for students with limited knowledge in this field. Topics covered in this course is Binary and hexadecimal numbers, logical circuits, basic structure of computer, computer programming, operating system, and computer networks, etc. If you are already familiar with these subjects, you do not need to take this course. The course will be composed with reading assignments, lectures, and exercises.

**6. Course Goals (Attainment Targets)**

- (1) Capable to explain various basic components of computer system and its functions
- (2) Capable to explain hardware and software of computer systems
- (3) Capable to explain the role of an operating system
- (4) Capable to explain about data structure and algorithm
- (5)
- (6)

**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) (4)	
	Specialized knowledge and literacy		
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	
	Fundamental Competencies for Working Persons	Practice	
		Ability to step forward	
Ability to think through		(3) (4)	
	Ability to work in a team		
Professional ethics			

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

None

**9. Textbooks (Books required to have to take this course)**

None

**10. Reference Books (optional books for further study)**

To be announced in the Class.

## 11. Evaluation

Goals	Evaluation method & point allocation					
	examination	Quiz	Reports	Presentation	Deliverables	Other
(1)		<input type="radio"/>	<input type="radio"/>			
(2)		<input type="radio"/>	<input type="radio"/>			
(3)		<input type="radio"/>	<input type="radio"/>			
(4)		<input type="radio"/>	<input type="radio"/>			
(5)						
(6)						
Allocation		60	40			

## 12. Notes

You should bring your PC or Mac to the class.

## 13. Course plan

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

---

Lesson 1: Introduction	Lecture 60 min. Exercise 30min.
------------------------	------------------------------------

---

1. Course Overview
2. What's in a Computer?
3. History of Computer

---

Lesson 2: Binary Numbers and Logical calculation	Lecture 45 min. Exercise 45 min.
--	-------------------------------------

---

1. Bit and Byte
2. Binary Numbers and its Calculation
3. Logical Value and its Calculation

---

Lesson 3: Presentation of Information	Lecture 45 min. Exercise 45 min.
---------------------------------------	-------------------------------------

---

1. Character codes
2. Analog – Digital Conversion
3. Sound, Photo, and Video

---

Lesson 4: Inside the CPU	Lecture 45 min. Exercise 45 min.
--------------------------	-------------------------------------

---

1. Logical Circuit
  2. Adder
  3. Logical Circuit Simulator
-

---

Lesson 5: The Toy Computer

Lecture 45 min.  
Exercise 45 min.

---

1. The Toy Computer
2. Real CPU
3. Other types of Computers

---

Lesson 6: Software and Algorithms

Lecture 45 min.  
Exercise 45 min.

---

1. What is an Algorithm?
2. How to describe Algorithm
3. Searching
4. Sorting
5. Complexity of Problems

---

Lesson 7: Operating Systems

Lecture 45 min.  
Exercise 45 min.

---

1. Operating Systems
2. File Systems

---

Lesson 8: Mid Term Summary

Lecture 45 min.  
Exercise 45 min.

---

1. Review of what we have learned so far
2. Questions and Answer
3. Review of Exercises

---

Lesson 9: Fundamentals of Artificial Intelligence

Lecture 90 min.

---

1. What is Artificial Intelligence?
2. Machine Learning
3. Neural Networks
4. Genetic Algorithm

---

Lesson 10: Artificial Intelligence Practice

Lecture 45 min.  
Exercise 45 min.

---

1. AI on Python
  2. Categorizing and Clustering
  3. Practice of Data Analysis by AI
-

---

Lesson 11: Programing and Programing Languages

Lecture 45 min.  
Exercise 45 min.

---

(Prof. Shima)

1. Assembly Language
2. High Level Languages
3. Software Development
4. Software as Property

---

Lesson 12: Learning to Program

Lecture 45 min.  
Exercise 45 min.

---

(Prof. Shima)

1. JavaScript
2. Loops and Conditionals
3. Using Web Services

---

Lesson 13: Networking and the Internet

Lecture 45 min.  
Exercise 45 min.

---

(Lec. Yokoyama)

1. Ethernet and Wireless LAN
2. Internet Overview
3. IP address and the Internet Protocol

---

Lesson 14: World Wide Web and other Services

Lecture 45 min.  
Exercise 45 min.

---

(Lec. Yokoyama)

1. How the Web works
2. Other services
3. Web Security

---

Lesson 15: Latest Trends of Image Processing

Lecture 90 min.

---

(Lec. Ohtera)

1. Latest Trends of Image Processing
  2. Virtual Reality Experience
-

**1. Course Code**

2207

**2. Course Title**

Fundamentals of Software Engineering

**3. Teacher**

Mamoru ITO

**4. Term and Schedule**

F3 Fri 3~4

**5. Course Overview and Objectives**

Software plays an increasingly important role in the evolution of ICT systems. However, it is actually hard to develop software on time, on budget, and on target. It is widely believed that many software development projects fail or are challenged. This course will provide comprehensive and interdisciplinary learning opportunities for those who wish to tackle with the challenges of software projects. This course will cover both software engineering and project management issues.

**6. Course Goals (Attainment Targets)**

- (1) To have the basic understanding of software development life cycle and process models
- (2) To be able to utilize basic techniques in software analysis and design
- (3) To acquire the practical thinking and decision-making skills required for software project management
- (4) To deepen an understanding of social environments surrounding software development
- (5)
- (6)

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

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

None

**9. Textbooks (Books required to have to take this course)**

None

**10. Reference Books (optional books for further study)**

None

## 11. Evaluation

Goals	Evaluation method & point allocation					
	examination	Quiz	Reports	Presentation	Deliverables	Other
(1)	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	
(2)	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	
(3)	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
(4)	<input type="radio"/>		<input type="radio"/>			
(5)						
(6)						
Allocation	30	25	25	10	10	

## 12. Notes

This course does not use a textbook, but course materials will be provided on Moodle.

## 13. Course plan

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

---

Lesson 1: Basic Principles Lecture/Discussion 90 min

---

The Software runs on a computer. The basic knowledge on computers expands an understanding of software development. We will learn how a computer works in this lesson.

- Introduction
- Computer organization
- Machine language and assembly language
- Flow of a program
- Interrupt handling

---

Lesson 2: Data Structures and Algorithms Lecture/Discussion 90 min

---

The data structures and algorithms should be considered for us to design a computer program. This lesson will provide students with the introduction of data structures and algorithms.

- Major data structures – array, list, stack, queue, and tree
- Major algorithms - sorting algorithms and search algorithms
- Computational complexity

---

Lesson 3: Software and Software Engineering Lecture/Discussion 90 min

---

The software grows increasingly important along with the popularization of computers. We will discuss the reality surrounding software development after understanding of the features of the software and learn the necessity of software engineering.

- 1.Features of software
  - 2.Importance of software
  - 3.Environment surrounding software development
  - 4.Role of software engineering
-

---

#### Lesson 4: Software Development Processes

Lecture/Discussion 90 min

---

A "Process" can be defined as a "set of interrelated or interacting activities, which transforms inputs into outputs". Good process is required to produce good outputs. We will learn the overview of software life cycle process models and the meaning of process improvement.

- Definition of software process
  - Life cycle models
  - Present situation and issues on software process
  - Meaning of software improvement
- 

#### Lesson 5: Project Management Processes

Lecture/Discussion 90 min

---

Generally, software is developed by a project team. The project team should be managed adequately. This lesson will clarify a project, project management, project lifecycle, and project organizations.

- Definition of project and project management
  - Project life cycle
  - Relationship with organizations and stakeholders
  - Trend in project management standards
- 

#### Lesson 6: Requirements Analysis

Lecture/Discussion 90 min

---

The role of software engineer is to realize the requirements of customers and users by use of software. But their requirements are sometimes ambiguous and lack consistency. We should acquire their requirements exhaustively and analyze them systematically. We will marshal the concepts of requirements and flow of requirement analysis.

- Difference between need want and demand
  - Functional requirements and non-functional requirements
  - Flow of requirements analysis
  - Requirements modeling
- 

#### Lesson 7: Software Design

Lecture/Discussion 90 min

---

The optimum design technique should be selected based on the target and objectives of software development. This lesson introduces major software design techniques such as structured design and object-oriented design.

- Introduction of major software design techniques
  - Structured design
  - Object-oriented design
- 

#### Lesson 8: Software Testing

Lecture/Discussion 90 min

---

Software testing is becoming important because defects in software have the significant impact on the society. We will learn the positioning of software testing, kinds of software testing, and testing techniques in this lesson.

- Necessity and limitation of software testing
  - Flow of software development and testing phases
  - White box test and black box test
  - The major testing techniques
-

---

**Lesson 9: Software Quality**

Lecture/Discussion 90 min

One of the objectives of software engineering is to develop high-quality software. Management on software quality is more important than that of hardware quality because software is invisible. We will understand the whole picture of software quality and necessary activities to achieve the required quality in this lesson.

- Difference between quality and grade
- Software quality model
- Quantitative quality management
- Software design review

---

**Lesson 10: Object-Oriented Methodology**

Lecture/Discussion 90 min

Object-oriented methodology is becoming popular in association with increasing in size and complication of software. This methodology is used not only for programming but also for requirements analysis and software design. This lesson will focus on object-oriented analysis and design by the use of UML modeling.

- A brief history of object-oriented methodology
- Object-oriented analysis
- Modeling and UML diagrams
- Object-oriented design

---

**Lesson 11: Unified Modeling Language (UML) Part 1**

Lecture/Exercise 90 min

UML is becoming commonly-used with object-oriented technology. UML stands for Unified Modeling Language, which is a useful tool for analysis and design of complex software systems. We will learn how to describe major diagrams. This lesson focuses on the structural diagrams: Class Diagram and Object Diagram.

- Overview
- Modeling types and standard diagrams
- Class Diagram
- Object Diagram

---

**Lesson 12: Unified Modeling Language (UML) Part 2**

Lecture/Exercise 90 min

UML is becoming commonly-used with object-oriented technology. UML stands for Unified Modeling Language, which is a useful tool for analysis and design of complex software systems. We will learn how to describe major diagrams. This lesson focuses on the behavioral diagrams: Use Case Diagram, Sequence Diagram, State Machine Diagram, and Activity Diagram.

- Use Case Diagram
  - Sequence Diagram
  - State Machine Diagram
  - Activity Diagram
-



---

**Lesson 13-14: Exercises in UML Modeling****Group Work: 180 min**

---

Software analysis and design includes various activities from requirements analysis to implementation, which holds extremely important position in software developments. In the following three lessons, exercises in the analysis and design of software systems are conducted through group work. After the exercises, each group of the students makes a presentation on the results of group work.

- Exercises in structural and behavioral modeling
- Exercises in analysis and design of software
- Exercises in drawing UML diagrams
- Presentations

---

**Lesson 15: Summary and the Latest topics****Lecture/Discussion 90 min**

---

Software engineering is advancing as well as information and communication technologies. We will learn the latest trend in software engineering. Issues in engineering ethics also will be covered in this lesson.

- The latest topics of software development
- The latest topics of project management
- Engineering ethics in software

---

**Lesson 16: Term-end Examination****Examination: 90 min**

---

A term-end exam will be conducted in order to evaluate the degree of comprehension of each student.

---

**1. Course Code**

2209

**2. Course Title**

Computer Programming Exercises

**3. Teacher**

Sandor Markon

**4. Term and Schedule**

F2 Thu 3~4

**5. Course Overview and Objectives**

Programming is the foundation of every other subject in ICT. By becoming proficient in programming, students will be able to actively participate in projects involving system creation. Programming is also necessary for testing ideas, constructing and maintaining networks and servers, and in many other areas.

The course first reviews the fundamentals of procedural programming through experimental exploration, using the dynamic, interactive, object-oriented Python language. Next, students are introduced to static typing using C in the Linux environment and Java in the Processing framework, so they will be prepared to continue their studies with Java for Android programming, and C for generic programming.

The course also introduces students to other common languages like C++ for Linux programming, Common Lisp for AI (Artificial Intelligence) programming, Mathematica for scientific programming etc. so they can continue extending their repertoire after finishing the course.

**6. Course Goals (Attainment Targets)**

- (1) Become able to read, understand, and modify programs written in Python and Java.
- (2) Become able to use the development environment of Processing.
- (3) Become able to develop a small but complete system in Processing.
- (4) Can write and use Python scripts for everyday tasks.
- (5)
- (6)

**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) (4)	
	Specialized knowledge and literacy	(2) (3)	
Human skill (Tankyu skill)	Ability to continually improve own strengths	(3) (4)	
	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	(4)
	Ability to think through	(4)	
	Ability to work in a team		
Professional ethics			

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

Fundamentals of Computer Systems

**9. Textbooks (Books required to have to take this course)**

None. This course uses only material freely available on the Internet (links will be provided on 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			40	30	30	

## 12. Notes

## 13. Course plan

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

---

Lesson 1: Orientation, introduction, motivation (lecture and demonstration, 90 min)

---

What is programming? We consider solving everyday tasks, first by natural language, then by writing exact and detailed instructions. Students learn the basics of the Python language through a few simple exercises and use it to test their understanding of the elements of programming principles.

---

Lesson 2: Analyzing an Open Source program (group work, 90 min)

---

A small real-world C program is reviewed in detail, motivating the need for "Code Reading" skills and tools. We discuss the differences of the C syntax from Python, the need for declarations and compilation, and other C-related issues.

---

Lesson 3: Code Reading fundamentals, review of the program (lecture, 90 min)

---

We review some commonly used tools and techniques for code reading, and use them to analyze a larger piece of OSS system.

---

Lesson 4: C programming topics and pitfalls (group work, 90 min)

---

We work through a set of examples from OSS systems showing how C is used in practice, with emphasis on avoiding bad coding, dangerous constructs.

---

---

Lesson 5: Java programming topics 1.

(lecture and group  
discussion, 90 min)

---

Java is introduced as an object-oriented and safer alternative to C. We review the object-oriented way of thinking and its use to develop models for systems.

---

Lesson 6: Java programming topics 2.

(lecture and group  
discussion, 90 min)

---

We review some important Java libraries used in Android programming, including graphics, user interactions, and networking.

---

Lesson 7: Java programming topics 3.

(lecture and group

---

We review the Processing language and programming environment, in particular its use for rapid prototyping of interactive programs. Students develop original demonstrations with graphics and sound, using Processing.

---

Lesson 8: Java exercises 1.

(group work, 90 min)

---

Groups of students develop Java applications for Android, using Eclipse.

---

Lesson 9: Java exercises 2.

(group work, 90 min)

---

Presentation of the group work results.

---

Lesson 10: Python topics 1.

(lecture and discussion,

---

The power of the Python language is demonstrated through using it for common tasks. Reviewed concepts include dynamic development, advanced data types, iterations, exceptions, objects, modules.

---

---

Lesson 11: Python topics 2.

(lecture and discussion,  
90 min)

---

We review Python libraries, including networking, graphics, numerical computation, databases.

---

Lesson 12: Python topics 3.

(lecture and discussion,  
90 min)

---

We review practical development in Python, with structuring and building a project, testing, using the unit test facilities, and deployment.

Introduce development using iPython notebooks, Jupyter and other IDEs.

---

Lesson 13: Python exercises 1.

(group work, 90 min)

---

Student groups use Python to build and test a small but complete system providing a well-defined new functionality, in a given short time.

---

Lesson 14: Python exercises 2.

(group work, 90 min)

---

Presentation and discussion of the results of the group work.

---

Lesson 15: Wrap-up

(discussion, 90 min)

---

Students review their experience with programming; discussions are directed to helping to make programming a natural, integral part of their life with ICT. We also discuss other programming languages and methods including Mathematica and Common Lisp, and the choices available for finding the best tools.

---

**1. Course Code**

2222

**2. Course Title**

Advanced Information Network

**3. Teacher****4. Term and Schedule**

F1 Wed 3~4

**5. Course Overview and Objectives**

In this course the students study the advanced technologies for constructing and operating computer network on the Internet infrastructure. The aim is to gain an understanding and knowledge of the Internet technologies. The course consists of lectures along with the layered network technologies that are the essential structure of the Internet technologies and changing of them in future. The lectures contain the content about the link technology, IP/TCP/UDP technologies, some network applications and investigation how they are changed in future.

**6. Course Goals (Attainment Targets)**

- (1) To know how the Internet works.
- (2) To know how the elements of the Internet will be changed.
- (3) To know modern networked application design.
- (4)
- (5)
- (6)

**7. Correspondence relationship between Educational goals and Course goals**

Educational goals of the school		Course Goals	
High level ICT skills	Basic academic skills		
	Specialized knowledge and literacy	(1),(2),(3)	
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	
	Fundamental Competencies for Working Persons	Practice	
		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)**

Fundamentals of Computer Systems  
Fundamentals of Information Networks

**9. Textbooks (Books required to have to take this course)**

None

**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

## 13. Course plan

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

---

Lesson 1: Introduction (Lecture 90 min)

---

This lesson explains an outline of the course and a brief summary of the Internet technologies. The Internet consists of stacked multiple protocols, which is called “layered network architecture”. As a beginning of the Internet studying, students learn the layered network architecture of the Internet communication to help them to obtain the perspective view how the Internet communication mechanism works.

1. Orientation (learning objectives, schedule, evaluation)
2. A summary of the present Internet technologies and applications
3. An introduction of the layered network architecture

---

Lesson 2: Link-layer technology (1) (Lecture 90 min)

---

This lesson explains the function of the link layer and the physical layer mechanisms. The link layer deals with a reliable data transmission between pairs of nodes that connected with same link media. The lesson introduces current major link technologies, e.g. the Ethernet, the WiFi, the LTE and so on, to help students to judge appropriate link technologies for their demanding.

1. A brief summary of the link layer mechanism
2. An introduction of the major link technologies

---

Lesson 3: Link-layer technology (2) (Lecture 90 min)

---

This lesson continues to explain the link layer mechanism. Students learn fundamental functions about the link layer mechanism, e.g. media access control and network topology creation with link connection. They experience the link layer functions through practical exercises. The aim is to understand the link layer communication capabilities and limitations.

1. A study of the link layer functions (MAC, Addressing, Topology)
2. Practical exercises (check MAC address, ARP table)

---

Lesson 4: Network-layer technology (1) (Lecture 90 min)

---

This lesson explains the function of the network layer mechanism. The network layer is responsible for a data transmission over the multiple link media. This lesson introduces the Internet Protocol (IP) as the representative network layer protocol of the current Internet and its related technologies. Students learn the fundamental of the IP technologies first, e.g. the IP address, the addressing assignment rules, the IP packet structure. Then students learn additional IP related technologies, such as Dynamic Host Configuration Protocol (DHCP) and Network Address Translation (NAT) mechanisms.

---

---

**Lesson 5: Network-layer technology (2)****(Lecture 90 min)**

The network layer deals with packet forwarding and routing functions. The router is a computer to support the IP packet transmission over different link media. While the transmission, the routers have to decide an appropriate route sender node to receiver node. This lesson introduces the principle of the routing mechanisms. The aim is to understand the network layer communication capabilities and limitations. Moreover, this lesson explains Internet Communication Message Protocol (ICMP) that is used for control message transmission with IP mechanism.

---

**Lesson 6: Transport-layer technology****(Lecture 90 min)**

This lesson explains the function of the transport layer mechanism. The transport layer deals with logical units of a data transmission. The major transport layer protocols are Transmission Control Protocol (TCP) and User Datagram Packet (UDP). TCP provides error-free data transmission with their packet retransmission mechanism. TCP also regulates bandwidth usage of the transmission for keeping fair use and avoiding congestion at the link media. Meanwhile, UDP does not provide any reliable control for data transmission. In this lecture, students learn TCP and UDP mechanisms and their works. The aim is to understand the transport layer communication characteristics.

---

**Lesson 7: Presentation and discussion****(Lecture 90 min)**

In this lesson, students have to present their presentation. The presentation must include the situation of the Internet deployment in student's country. Otherwise, the interested link-layer technologies and its usage are acceptable as the presentation. Students have 15 minutes for their presentation and discussion.

1. Presenting student's presentation.
2. Having discussion based on their presentations.

---

**Lesson 8: Review for lectures****(Lecture 90 min)**

In this lesson, students have an opportunity to clear their doubts and to demand an additional lecture about the things they want to know more.

1. A review of the previous lectures
2. An opportunity for having questions
3. An opportunity for demanding an additional lecture

---

**Lesson 9: Domain Name technology****(Lecture 90 min)**

This lesson explains the concept of domain name on the Internet and how the naming space is operated. Domain name is one of the significant technologies for the ordinary users. It is operated with DNS (Domain Name System) as the huge scale distributed databases. With the DNS, the ordinary users can access to the host on the Internet without any concern for IP addresses and physical location. Students learn the divide-and-conquer operation of the domain name and how the DNS supports the operation. The aim is to understand the principle of the naming function on the Internet and its application.

---

**Lesson 10: Application-layer technology****(Lecture 90 min)**

This lesson explains the function of the application layer abstraction. The application layer is an abstraction layer providing communication methods designed for process-to-process data transmission across an IP network. As hiring communication on the application layer function, Socket API is provided for network programming. Students learn the abstraction of the layer and some examples for network application. The aim is to understand the method to use communication functions for their demand.

---



---

**Lesson 11: WWW technology****(Lecture 90 min)**

This lesson explains World Wide Web technology as a representative application on the Internet. WWW is a major application on the Internet. WWW can support various kinds of services. WWW technology consists of three technologies such as HTTP, URL and HTML. Through the lecture of the technologies, students learn how to make WWW technology with them. Students also learn about the possible applications on the Internet from some examples. The aim is to understand WWW capability and to become able to design WWW services.

---

**Lesson 12: Other technologies****(Lecture 90 min)**

This lesson explains network related important technologies, Public key cryptosystem, Virtualization and Distributed computing. Public key cryptosystem is one of the most significant techniques against security concerns on communication via the Internet. Virtualization is expected that it may contribute to give more flexibility and more controllability to networking by software-based network control. Distributed Computing provides powerful and interesting services based on communication on the Internet. Students learn these technologies for understanding more about applications and the capabilities in future.

1. A study of Public key cryptosystem
2. A study of Virtualization technologies (Virtual Machine, Virtual Network, Cloud Computing)
3. A study of Distributed Computing (Server-Client, Clustering, Distributed Computing, P2P)

---

**Lesson 13: Presentation and discussion****(Lecture 90 min)**

In this lesson, students have to present their presentation. Students are required to choose the technical mechanisms or the services. And students investigate them and present their presentations. Students and teacher have a discussion with their presentations.

1. Presenting student's presentation.
2. Having discussion based on their presentations.

---

**Lesson 14: Review for lectures****(Lecture 90 min)**

In this lesson, students have an opportunity to clear their doubts and to demand an additional lecture through about the things they want to know more.

1. A review of the previous lectures
2. An opportunity for having questions
3. An opportunity for demanding an additional lecture

---

**Lesson 15: Conclusion****(Lecture 90 min)**

In this lesson, the course content from the 1st up to 14th is reviewed briefly for confirming and supporting student's understanding.

1. A summary of the whole course content
  2. Presentation
-

**1. Course Code**

2224

**2. Course Title**

Information Network Special Experiments

**3. Teacher**

Teruaki Yokoyama

**4. Term and Schedule**

F2 Tue 4~5 &amp; Wed 1~2

**5. Course Overview and Objectives**

In this course the students experience the technologies for constructing and operating computer network and communication functionalities in programming. The aim is to gain an understanding and knowledge of the Internet technologies. The course consists of workshops along with the IP technologies on routers that are the essential technology of the Internet. Moreover, students will experience how to employ communication function on the Internet in their programming, such as Socket and HTTP.

**6. Course Goals (Attainment Targets)**

- (1) To know how the Internet works on routers
- (2) To know mechanism of http communication
- (3) To know mechanism of socket communication
- (4)
- (5)
- (6)

**7. Correspondence relationship between Educational goals and Course goals**

Educational goals of the school		Course Goals	
High level ICT skills	Basic academic skills		
	Specialized knowledge and literacy	(1),(2),(3)	
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	
	Fundamental Competencies for Working Persons	Practice	
		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)**

basic understanding of shell environment on Linux or command line on Windows

**9. Textbooks (Books required to have to take this course)**

none

**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			30			70

## 12. Notes

## 13. Course plan

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

---

Lesson 1: Introduction (Lecture 90min)

---

- Overview of this lecture
- Communication on the Internet

---

Lesson 2: Preparation (Exercise 90min)

---

- Prepare and Check programming environment
- Skill check (Programming / Network)

---

Lesson 3: Network Construction (1) (Lecture 90min)

---

- Link layer mechanism
- IP layer mechanism
- ICMP, tools

---

Lesson 4: Network Construction (2) (Exercise 90min)

---

- Raspberry PI setup
- Basic instruction for Linux

---

Lesson 5,6,7,8: Network Construction (3)(4)(5)(6) (Exercise 360min)

---

- Network construction  
1st level construction, one PC under one router
- Network test  
ICMP (ping/traceroute), tcpdump

---

Lesson 9,10,11,12: Network Construction (7)(8)(9)(10) (Exercise 360min)

---

- Network construction  
2nd level construction, multiple routers
  - Routing configuration  
concept, routing add/del
-

**1. Course Code**

2225

**2. Course Title**

Information Security

**3. Teacher**

Hisato Shima

**4. Term and Schedule**

F3 Wed 3~4

**5. Course Overview and Objectives**

In this course students learn basics of information security, in both management aspect and technical aspect. Students will understand of various types of security incidents and attacks, and learn methods to prevent, detect and react incidents and attacks.

Students will also learn basics of application of cryptography which are one of the key technologies to implement security functions.

**6. Course Goals (Attainment Targets)**

- (1) To become able to explain various Information security threat and controls for it.
- (2) To become able to explain information security incident response.
- (3) To become able to explain the usage of Common Key cryptography and Public Key cryptography.
- (4) To become able to research about a security topic and present it.
- (5)
- (6)

**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		
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		(4)	
	Ability to work in a team	(4)	
Professional ethics			

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

Fundamentals of Information Networks (achievement of attainment targets is required)

**9. Textbooks (Books required to have to take this course)**

None

**10. Reference Books (optional books for further study)**

Title: Principles of Information Security

Author: Michael E. Whitman and Herbert J. Mattord

Publisher: Cengage Learning;

ISBN: 1285448367

## 11. Evaluation

Goals	Evaluation method & point allocation					
	examination	Quiz	Reports	Presentation	Deliverables	Other
(1)		○		○		
(2)		○				
(3)		○				
(4)				○		
(5)						
(6)						
Allocation		60		40		

## 12. Notes

## 13. Course plan

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

---

Lesson 1: Overview of Information Security (Lecture, 90 min)

---

The overview of this course will be explained. Students understand the goal and scope of this course through several examples of security incidents.

1. What is Information Security?
2. Course Orientation (learning objectives, performance evaluation, etc.)
3. Examples of Information Security Incidents

---

Lesson 2: Basics of Information Security and Human aspects (Lecture, 90 min)

---

Students learn the various causes of security incidents. Among them, human Aspects of Security incident and its countermeasure is explained. Students also learn the key concepts of information security.

1. Trends of Information Security Incidents
2. Human Aspect of Information Security
3. The Key concepts of Information Security
4. Basic terminologies in Information Security

---

Lesson 3: Information Security for Client devices (Lecture, 90 min)

---

Security Attacks for Client devices such as Personal Computers is explained and counter measures for attacks are discussed

1. What the malicious software does to the system?
2. How the malicious software intrude the device?
3. How to prevent and detect malicious software?

---

Lesson 4: Information Security for Server systems (Lecture, 90 min)

---

Security Attacks for Server systems is explained and counter measure for attacks are discussed..

1. How server systems are attacked?
  2. How to protect servers from attack?
-

---

## Lesson 5: Information Security for Computer Network

(Lecture, 90 min)

---

Security Attacks for Computer Network is explained and counter measures for attacks are discussed

1. Security of Computer Network
2. Denial of Service Attack
3. Attacks to Web Servers

---

## Lesson 6: Information Security Risk Management

(Lecture, 90 min)

---

Risk Management process for Information Systems is explained

1. What is Risk Management process?
2. Identifying Information Assets
3. Identifying Security Risk and evaluation
4. Risk Treatments

---

## Lesson 7: Security Risk management as an Organization

(Lecture, 90 min)

---

Students learn how an organization manage security risks, including, establishing policy, security organization and rules.

1. Information Security Management System (ISMS)
2. Information Security Policy, Standards and Procedures
3. Information Security Evaluation

---

## Lesson 8: Security Incident Response

(Lecture 30 min, Exercise  
60 min)

---

Students learn how an organization react and handle security incidents through exercise

1. What is Security Incident response
2. Computer Security Incident response team
3. Incident response exercise

---

## Lesson 9: Information Security and Cryptography

(Lecture, 90 min)

---

Cryptography is an essential technology to protect Information Security. In this section, Students learns about basic concept of cryptography

1. Requirements for Secure Communication
2. What is Cryptography?
3. Modern Cryptography
4. Recommended Ciphers

---

## Lesson 10: Common Key Cryptography

(Lecture 45 min, Exercise  
45 min)

---

Technology for Confidentiality (Part 1). Students learn and exercise Common Key Cryptography

1. Common Key Cryptography algorithms: DES, Triple DES, AES
  2. Encryption modes
  3. Exercise on Common Key Cryptography
-

---

Lesson 11: Public Key Cryptography

(Lecture 45 min, Exercise  
45 min)

---

Technology for Confidentiality (Part 2). Students learn and exercise Public Key Cryptography.

1. What is a Public Key Cryptography?
2. RSA
3. Hybrid encryption
4. Exercise of Public Key Cryptography?

---

Lesson 12: Data Integrity and Digital Signature

(Lecture 45 min, Exercise  
45 min)

---

Technology for Integrity. How to detect unauthorized change of data

1. Integrity of Data
2. Hash Function
3. Digital Signature
4. Exercise of Hash functions and Digital Signature

---

Lesson 13: Public Key Infrastructure and Summary of Course

(Lecture, 90 min)

---

Technology for Authenticity. Public Key Certificate and Public Key Infrastructure (PKI)

1. Key Certificate: Digital Signature of Public Key
2. Public key Infrastructure (PKI) and Certificate Authority
3. Summary of Information Security Course

---

Lesson 14-15: Presentation and Discussion

(Presentation, 180 min)

---

Groups of Students will make presentations for the topic they selected and researched. After each presentation, we have Q&A and Discussion session in the class.

---

**1. Course Code**

2231

**2. Course Title**

Project Management

**3. Teacher**

Chika Yoshida

**4. Term and Schedule**

S1 Thu 1~2

**5. Course Overview and Objectives**

The purpose of this course is to give students an understanding of Project Management (PM) concepts including Project Knowledge Body of Knowledge (PMBok) through lecture, discussion. It applies practical case study on "Pasta Bridge Constriction Project" as group exercise as a project work. Students will be able to learn how to deliver projects on time and under budget with high quality. They will also learn the importance of communication on team. The course will be run via lectures, interactive group discussion, and "Pasta Bridge Constriction" as a project work.

**6. Course Goals (Attainment Targets)**

- (1) Able to explain the Project Management Body of Knowledge as a base of Project
- (2) Able to make Work Break down Structures and schedule with PART/CPM to start the project.
- (3) Able to explain Earned Value Management for project planning and execution.
- (4) Able to explain Project Risks and way of management.
- (5) Able to explain Project Contract Variation.
- (6) Able to execute an actual Project work as a member or the leader to understand roles of PM.

**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), (6)	
	Specialized knowledge and literacy	(3), (4), (5)	
Human skill (Tankyu skill)	Ability to continually improve own strengths	(1), (2), (6)	
	Ability to discover and resolve the problem in society	Problem setting	(3), (4), (5), (6)
		Hypothesis planning	(3), (4), (5), (6)
		Hypothesis testing	(3), (4), (5), (6)
		Practice	(6)
	Fundamental Competencies for Working Persons	Ability to step forward	(6)
Ability to think through		(2), (3), (4), (5), (6)	
	Ability to work in a team	(6)	
Professional ethics		(4), (5), (6)	

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

None.

**9. Textbooks (Books required to have to take this course)**

None.

**10. Reference Books (optional books for further study)**

- Software Project Management For Dummies by Teresa Luckey and Joseph Phillips
- AMA Handbook of Project Management by Paul c. Dinsmore, Jeannette Cabanis-Brewin
- A Guide to Project Management Body of Knowledge (PMBOK Guide)



## 11. Evaluation

Goals	Evaluation method & point allocation					
	examination	Quiz	Reports	Presentation	Deliverables	Other
(1)			○	○		
(2)			○	○		
(3)			○	○		
(4)			○	○		
(5)				○		
(6)			○	○	○	
Allocation			40	40	20	

## 12. Notes

The lecture contents will be listed on Moodle and exercise material will be provided to you in the class.

## 13. Course plan

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

---

Lesson 1-2: Introduction to Project Management (Lecture, 90min. Exercise, 90 min.)

---

Explanation of Course logistics and overview of Project Management with WBS

Course Orientation.

- What a project is?
- Characteristics of Project.
- Execute Project Successfully.
- Basic Process of Software Development Project.
- Group project description (Pasta Bridge)
- What is Work Breakdown Structures
- Group Exercise (WBS)

---

Lesson 3-4: Planning Project (Lecture, 90min. Exercise, 90 min.)

---

To learn about Project Time Estimation

- Project Scheduling
- How to make Network Diagram
- Using PERT for Estimation
- Calculate with CPM
- Group Exercise (PERT/CPM)

---

Lesson 5-6: Controlling Project (Lecture, 90min. Exercise, 90 min.)

---

To learn how to use Earned Value Management in Project

- What is Earned Value Management
- EVM Procedure for Project Progress Management
- Words and meaning for EVM (PV/AC/EV/SPI/CPI/ETC/EAC/VAC)
- Group Exercise (EVM)
- Explanation of How to make Project Planning Document through Pasta Bridge Construction Project

---

Lesson 7-8: Project Risk Management

(Lecture, 90min. Exercise,  
90 min.)

---

To learn how to manage Risk on Project:

- Risk Standard Awareness
- Risk Management Process
- Risk Identification Tool / Technique
- Risk Analysis
- Risk Response Planning
- Level of Risk Management
- Group Exercise (Risk Response)

---

Lesson 9-10: Group Work for Intermediate Report and Presentation

(Exercise, 90 min.  
Presentation, 90 min.)

---

To learn how to make Planning Report for project through the Group work and the presentation.

Group Exercise Required Contents:

- Work Breakdown Structures,
- Schedule (PERT CPM Chart /Network Diagram / Gantt chart)
- Resource assignment Plan
- Cost Estimation
- Risk Management Plan

---

Lesson 11-12: Project Contract Management

(Lecture, 90min.  
Exercise, 90 min.)

---

To learn various kind of project contract and the purpose.

- Variation of Project Contract and the differences.
- A case of Oresund Project by Fixed Price Award Fee (FPAF)
- A case of Cost Reimbursement
- Federal Acquisition Regulation (FAR)
- Project contract type in Japan
- Group Exercise (Project Contract)

---

Lesson 13-14: Pasta Bridge Construction Group Work and Weigh  
Resistance Testing

(Lecture 30min, Exercise,  
120min.)

---

Pasta Bridge Construction Group Work

- Pasta Bridge Construction Group Work
- Weigh Resistance Testing

---

Lesson 15: Final Presentation of Pasta Bridge Project / Summary

(Presentation, 60 min.  
Lecture, 30 min)

---

To confirm understanding and assessment

Group Presentation Required Contents:

- WBS and PERT
  - Result of EVM
  - Risk Plan and Responses
  - Design Concept of the Pasta Bridge
  - Group Comments what you gain through the project
  - Course Summary
-

**1. Course Code**

2245

**2. Course Title**

Advanced Software Developments (Cloud Computing)

**3. Teacher**

Muhammad WANNOUS, Ph.D.

**4. Term and Schedule**

S2 Fri 1~2

**5. Course Overview and Objectives**

This course serves as an introduction to Cloud Computing environment. It is designed to show how different technologies are used in to realize Cloud Computing and how to use this environment for hosting web applications.

This course implements PBL as an instructional approach. It includes several practical activities on building a Cloud and on utilizing Cloud services provided in the public domain.

The course also introduces a project on designing and deploying an application in the Cloud.

**6. Course Goals (Attainment Targets)**

- (1) Define Cloud Computing.
- (2) Describe the infrastructure of the Cloud.
- (3) Explain the different service models of the Cloud and compare them
- (4) Experiment with a simple system to provide Cloud services.
- (5) Experiment with one of the public Cloud service provider.
- (6) Practice designing and deploying a sample web application in the Cloud.

**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	(2) (4) (5) (6)	
	Ability to discover and resolve the problem in society	Problem setting	(4) (5) (6)
		Hypothesis planning	
		Hypothesis testing	
	Fundamental	Practice	(4) (5) (6)
	Competencies for Working Persons	Ability to step forward	(6)
Ability to think through		(4) (5)	
	Ability to work in a team	(4)	
Professional ethics			

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

A previous architectural knowledge of Cloud Computing is not required, but the following courses are required to be completed.

- [1] Fundamentals of Information Networks (2201)
- [2] Web application development (2249)

**9. Textbooks (Books required to have to take 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)**

- [1] Cloud Computing: A hands-on Approach, ISBN-13: 978-1494435141
- [2] Learning Openstack, ISBN-13: 978-1783986965

## 11. Evaluation

Goals	Evaluation method & point allocation					
	examination	Quiz	Reports	Presentation	Deliverables	Other
(1)		○				
(2)		○				
(3)		○				
(4)					○	
(5)					○	
(6)					○	
Allocation		40			60	

## 12. Notes

This course contains both theoretical and practical parts. Be prepared for using the shell interface and for coding (in Java).

Quizzes and projects 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, Definition and characteristics of Cloud Computing) (Discussion and Lecture 45 minutes)

---

[1] Course syllabus

[2] Grading

[3] Definition and characteristics of Cloud Computing

+ An overview of Cloud Computing and its characteristics.

+ Demonstration of deploying a sample project in Google App Engine.

---

Lesson 2: (Cloud services, deployment models, and applications) (Discussion and Lecture, 90 minutes)

---

[1] Service models.

[2] Deployment models (SaaS, PaaS, and IaaS).

[3] Examples of a number of Cloud-based services and applications.

---

Lesson 3: (Cloud concepts and technologies -Virtualization-) (Lecture 30 minutes, Practice, 60 minutes)

---

[1] An overview of the technologies utilized for Cloud Computing

+ Virtualization

+ Load balancing

+ Replication...etc.

[2] Lab-work: installing a Virtual Machine (which is one of the main resources in Cloud Computing) using VirtualBox (group work).

---

Lesson 4: (Cloud concepts and technologies -SDN and Load balancing-) (Lecture 30 minutes, Practice, 60 minutes)

---

[1] An overview of the network solutions in Cloud Computing (Software Defined Network)

[2] Lab-work: use VirtualBox to construct a network of Virtual Machines

+ Test network connectivity

+ Test Load Balancing (HAProxy)

---

---

Lesson 5: (Cloud services and platforms) (Discussion and Lecture, 90 minutes)

---

[1] An overview of the Cloud services

- + Compute
- + Storage
- + Database
- + Application
- + Contents delivery...etc.

[2] Examples of these services.

---

Lesson 6: (Open source private cloud software -OpenStack 1-) (Lecture 30 minutes, Practice, 60 minutes)

---

[1] An overview of open source software used for managing clouds

- + CloudStack
- + OpenStack

[2] Lab work: download and configure a Virtual Machine provided by Oracle to test OpenStack on VirtualBox (group work).

---

Lesson 7: ((Open source private cloud software -OpenStack 2-)) (Practice, 90 minutes)

---

In this session, we continue the lab work we started in the previous session and try to experience the use of OpenStack software pre-installed on the Virtual Machine (group work).

---

Lesson 8: (Review) (Discussion, 90 minutes)

---

In this session, we go through the main points we have studied so far in order to confirm what we have learnt and answer any questions about the concepts of Cloud Computing.

---

Lesson 9 : (Cloud Application Design -1-) (Lecture 30 minutes, Practice, 60 minutes)

---

[1] An overview of the design considerations and the reference architecture for Cloud applications.

[2] Introduction of Cloud application design methodologies.

[3] Sample web application (document storage)

---

Lesson 10 : (Cloud Application Design -2-) (Practice 90 minutes)

---

[1] Lab work: starting a new Cloud project on Google Apps Engine.

[2] Setting up the development environment

- + NetBeans IDE (including Google App Engine plugin)
  - + Google Cloud SDK.
  - + Google App Engine Java SDK
- 

Lesson 11 : (Cloud Application Design -3-) (Practice 90 minutes)

---

[1] Lab work: creating the first web application in our Google App Engine project.

- + use Google Cloud SDK to create the application.

[2] Deploying a sample 'Hello World' application to our Google App Engine project.

- + Use NetBeans IDE to create the application and build it.
  - + Use Google App Engine Java SDK to deploy the application to Google App Engine.
-

---

Lesson 12 : (Cloud Application Design -4-)

(Practice 90 minutes)

---

[1] Lab work: import the document storage application and build it in NetBeans IDE

[2] Examining the source code of the application.

[3] Deploying the application from NetBeans IDE.

---

Lesson 13 : (Cloud application benchmarking)

(Lecture 30 minutes,

Practice, 60 minutes)

---

[1] Benchmarking of web applications.

[2] Lab work: use Apache JMeter to test our Cloud application.

---

Lesson 14 : (Recommendations for successful migration to the Cloud)

(Discussion and Lecture,

90 minutes)

---

Migrating a service from a local server/machine to the Cloud and the issues that should be considered for this operation.

---

Lesson 15 : (Wrap up)

(Discussion, 90 minutes)

---

[1] Discuss and review the topics covered in this course.

[2] Suggestions of improvements.

---

**1. Course Code**

2247

**2. Course Title**

Special Programming Exercises

**3. Teacher**

Sandor Markon

**4. Term and Schedule**

S2 Thu 3~4

**5. Course Overview and Objectives**

An important area of programming for both developed and developing countries is using embedded systems, also called dedicated computers, or IoT (Internet of Things), that can help solving a wide range of technical and social issues. Some examples include wireless sensor networks for remote data collection or disaster prevention, RFID for inventory control, human body sensors for remote medicine etc. When compared to common PCs, embedded systems use different hardware and software platforms, and to use them require understanding of special concepts like direct hardware I/O (input-output), interrupts, real-time control, cross-development environments etc.

By finishing this course, the student will be able to recognize opportunities of effectively using embedded systems to solve ICT4D issues, and to propose and initiate projects, based on concrete experience with embedded systems.

**6. Course Goals (Attainment Targets)**

- (1) Become able to recognize suitable application areas and make proper choices for embedded systems.
- (2) Become able to design for reliability, maintainability, safety, and security in developing embedded systems.
- (3) Can develop for an embedded platform and use its development environment.
- (4) Can develop programs with embedded concepts like hardware control, sensors, actuators, timers, interrupts etc., through hands-on experience.
- (5) Find and solve a development problem using embedded systems.
- (6)

**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)	
	Specialized knowledge and literacy	(3) (4) (5)	
Human skill (Tankyu skill)	Ability to continually improve own strengths	(2)	
	Ability to discover and resolve the problem in society	Problem setting	(5)
		Hypothesis planning	
		Hypothesis testing	
	Fundamental Competencies for Working Persons	Practice	
		Ability to step forward	(5)
Ability to think through		(5)	
	Ability to work in a team	(5)	
Professional ethics		(2)	

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

Computer Programming Exercises

**9. Textbooks (Books required to have to take this course)**

None. This course uses only material freely available on the Internet (links will be provided on 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			30	30	40	

## 12. Notes

Students not comfortable with basic electric circuit concepts (currents and voltages, Ohm's law etc.) are advised to take part in voluntary lab sessions before taking the course.

## 13. Course plan

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

---

Lesson 1: Orientation and Introduction (lecture and demonstration, 90min)

---

Review through examples the basic concepts of embedded systems, from TV remote controls and rice cookers to airplane controls and power plants; the reasons for using them, principles, problems, evolution, and current status. Explain the course plan: discussions, practice, work group forming, projects, evaluation, and further studies. Students are shown some of the devices used in the course.

---

Lesson 2: Motivation by Examples (lecture and group discussion, 90min)

---

Introduce examples of embedded systems in products and services through case studies. Student groups are formed, and based on understanding some typical applications, discuss other uses in fields familiar to them, listing up possible project topics, analyzing their merits and difficulties, their novelty, feasibility, profitability and sustainability.  
Student groups start their discussions on their project topic.

---

Lesson 3: Platforms (a) – Arduino (practice, presentations, 90min)

---

Students learn to develop a simple application using the open source / open hardware Arduino platform as an example of working with a simple stand-alone embedded environment. Groups receive sets of Arduino boards, sensor and actuator devices, and after installing the development environment on their PCs, design, program, and test a simple embedded application according to the provided requirement specifications.  
Student groups present their project proposals with Tankyu charts and overall plans.

---

Lesson 4: Platforms (a) - Arduino (continued, 90min)

---

Student groups review the possibilities available with the provided hardware and software tools, and compete to design the most surprising embedded application with their resources on Arduino.

---



---

Lesson 5: Review of embedded concepts (1) (lecture and group discussion, 90min)

---

Starting from their experience with the Arduino board, student groups discuss basic embedded system concepts, reviewing and analyzing the handling of I/O devices, timings, process flow etc. Motivation is given for searching for more advanced capabilities like interrupts, multi-threading, guaranteed real-time response etc.

---

Lesson 6: Platforms (b) - Raspberry Pi (practice, 90min)

---

Student groups receive Raspberry Pi boards and install Linux on them. By connecting them to the network, they learn how to use such a self-development environment on a small embedded platform. Students also discuss common features and differences between the Raspberry Pi and the Arduino environment, and try to find out advantages and limitations through reading the documentation and performing experiments.

---

Lesson 7: Platforms (b) - Raspberry Pi (continued, 90min)

---

Student groups re-build their Raspberry Pi Linux OS from source, and add a new device driver, file system, or other extra capability of their choice that was not present in the original distribution. Discuss the experience from the point of view of open source vs. proprietary systems.

---

Lesson 8: Review of embedded concepts (2) (lecture and group discussion, 90min)

---

Starting from their experience with the Raspberry Pi board, student groups discuss using an operating system like Linux for embedded systems, reviewing the advantages and drawbacks of isolating the hardware from the application, and of providing basic development capabilities on the deployed embedded system itself. Soft- and hard real-time OS concepts will be introduced here.

---

Lesson 9: Mid-term project review (presentations, mid-term exam, 90min)

---

Student groups present the progress of their embedded application projects, reviewing their current status and roadmap. Different groups share their experiences and exchange advices.

---

Lesson 10: Review of embedded concepts (3) (lecture and group discussion, 90min)

---

Students review and compare the platforms that they have explored, and develop their own guidelines for choosing the proper environment for different applications. These will consider not only technical features, but also economic and social factors, IP issues, job creation, long-term local sustainability etc.

---

---

Lesson 11: Workshop: IoT (1)

(lecture and group discussion, 90min)

---

Visiting lecturers from ICTP introduce the concept of Internet of Things (IoT) and its role in developing countries, through examples from their practice.

---

Lesson 12: Workshop: IoT (2)

(lecture and group discussion, 90min)

---

Visiting lecturers demonstrate and explain using the new embedded platform "PYCOM" for IoT. Student groups explore creating and operating WSN using the provided equipment, and review their project topic in light of what they have learnt about IoT.

---

Lesson 13: Workshop: IoT (3)

(lecture and group discussion, 90min)

---

Student groups discuss their ideas and application areas for IoT with visiting lecturers, and review their experience with experiments on Arduino and various sensors.

---

Lesson 14: Workshop: IoT topics for developing countries

(lecture and group discussion, 90min)

---

Visiting lecturers review currently important Internet of Things topics for developing countries, including TV White Spaces, Delay Tolerant Networks (DTN) and successful applications of WSN.

---

Lesson 15: Final project review

(presentations, 90min)

---

Each group presents its project results, demonstrating the device and system they have built, explaining how it will solve an actual problem of development, how it can be put into practice, and how can its effects be evaluated and verified. Each team member takes part in the presentations in turn.

---

**1. Course Code**

2249

**2. Course Title**

Web Application Development

**3. Teacher**

Muhammad WANNOUS, Ph.D.

**4. Term and Schedule**

S1 Tue 1~2

**5. Course Overview and Objectives**

This course introduces the way the web operates and the design of web applications using the popular programming languages Java and JavaScript.

It starts with an introduction to the HTTP (and maybe FTP) protocol and namespace of the web, and then continues to cover the design of web web application for the client side (HTML, CSS, and JavaScript) and server side (Java).

**6. Course Goals (Attainment Targets)**

- (1) Describe how the web works
- (2) Describe the characteristics of the HTTP protocol
- (3) Practice designing web pages using HTML, CSS, and JavaScript
- (4) Practice using Java to create server side web application
- (5) Practice deploying a web application on Apache Tomcat
- (6)

**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)	
	Specialized knowledge and literacy	(3) (4) (5)	
Human skill (Tankyu skill)	Ability to continually improve own strengths	(3) (4) (5)	
	Ability to discover and resolve the problem in society	Problem setting	
		Hypothesis planning	
		Hypothesis testing	
		Practice	(3) (4) (5)
	Fundamental	Ability to step forward	(4) (5)
Competencies for Working Persons	Ability to think through	(2) (3)	
	Ability to work in a team	(4) (5)	
Professional ethics			

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

This course requires programming skills. Students are recommended to take this course after 'Data Structures and Object Oriented Programming (Java)' (2291) and 'Fundamentals of Database Systems' (2205).

The programming project is in Java, but you can use any other programming language that you are comfortable with.

**9. Textbooks (Books required to have to take this course)**

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

**10. Reference Books (optional books for further study)**

Servlets & JSP: A Tutorial, 2nd edition, 9781771970273

JavaScript & jQuery, 9781449399023

www.w3schools.com

## 11. Evaluation

Goals	Evaluation method & point allocation					
	examination	Quiz	Reports	Presentation	Deliverables	Other
(1)		○				
(2)		○			○	
(3)		○			○	
(4)					○	
(5)					○	
(6)						
Allocation		40			60	

## 12. Notes

This course contains both theoretical and practical parts. Be prepared for for designing web pages and coding (in JavaScript and in Java).

Quizzes and projects 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, How the WEB works) (Discussion and Lecture, 90 minutes)

---

[1] Course syllabus

[2] Grading

[3] How the WEB works?

- + The Internet
- + Client-Server architecture
- + The web browser

---

Lesson 2: (TCP Protocols for the WEB) (Discussion and Lecture, 90 minutes)

---

[1] HTTP Protocol

- + Request
- + Response
- + Methods
- + Parameters

[2] FTP

- + File storage and retrieval

---

Lesson 3: (Development environment) (Practice 90 minutes)

---

[1] Development environment setup

- + Java Development Kit (JDK)
- + NetBeans IDE
- + SQLite (MySQL)
- + Firefox (Chrome)
- + Apache Tomcat

---

Lesson 4: (Application interface -1) (Lecture 30 minutes, Practice 60 minutes)

---

[1] HTML

- + Tags
- + Attributes
- + Forms

[2] CSS

---

Lesson 5: (Application interface -2)	(Lecture 30 minutes, Practice 60 minutes)
[1] JavaScript <ul style="list-style-type: none"> <li>+ Variables and types</li> <li>+ Arrays</li> <li>+ Flow Control</li> </ul>	
Lesson 6: (Application interface -3)	(Lecture 30 minutes, Practice 60 minutes)
[1] jQuery <ul style="list-style-type: none"> <li>+ Introduction</li> <li>+ Events</li> <li>+ Animations</li> </ul>	
Lesson 7: (Server-side -1)	(Lecture 30 minutes, Practice 60 minutes)
[1] Java Servlet <ul style="list-style-type: none"> <li>+ Getting parameters from the request</li> <li>+ Connecting to the database</li> <li>+ Responding</li> </ul>	
Lesson 8: (Server side -2)	(Lecture 30 minutes, Practice 60 minutes)
[1] JavaServer Pages (JSP) <ul style="list-style-type: none"> <li>+ From Servlets to JSP</li> <li>+ Mixing Java with HTML and JavaScript</li> </ul>	
Lesson 9 : (Course project-1)	(Practice, 90 minutes)
[1] Course project (course management system) <ul style="list-style-type: none"> <li>+ Application design</li> <li>+ Interface design</li> </ul>	
Lesson 10 : (Course project-2)	(Practice, 90 minutes)
[1] Server side application <ul style="list-style-type: none"> <li>+ Adding courses</li> <li>+ Adding lecturers</li> <li>+ Adding students</li> </ul>	
Lesson 11 : (Course project-3)	(Practice, 90 minutes)
[1] Server side application <ul style="list-style-type: none"> <li>+ Listing and deleting courses</li> <li>+ Listing and deleting lecturers</li> <li>+ Listing and deleting students</li> </ul>	

---

Lesson 12 : (enter lesson title)

(Practice, 90 minutes)

---

[1] Debugging

- + Debugging interfaces (JavaScript)
- + Debugging server-side pages

[2] Capturing network traffic

- + Developer's console
- 

Lesson 13-14 : (enter lesson title)

(Parctice, 180 minutes)

---

From this session, the students will be divided into groups to work on selected number of additional features in the application.

Each group will select a set of features to add to the application.

- 1- Add a new table for the course room in the database.
  - 2- Add new functions to add, list, and delete rooms.
  - 3- Show the schedule of each student.
  - 4- Show the utilization of the rooms.
  - 5- Show the schedule of each lecturer.
  - 6- Detect conflicts in schedule.
- 

Lesson 15 : (Wrap up)

(Discussion, 90 minutes)

---

[1] Discuss and review the topics covered in this course.

[2] Suggestions of improvements.

---

**1. Course Code**

2251

**2. Course Title**

Tankyu Practice

**3. Teacher**

Toshiki Sumitani

**4. Term and Schedule**

F1 Tue 1~2

**5. Course Overview and Objectives**

This course will cover the concept and process of “Tankyu Practice”, which is the basis of the whole ICT innovator program. Students will identify social issues in developing countries, build possible solutions, verify them from three perspectives, and make presentations on the solution ideas in group work settings.

**6. Course Goals (Attainment Targets)**

- (1) Identify social issues.
- (2) Understand own strengths.
- (3) Find Tankyu themes.
- (4) Build solution hypothesis.
- (5) Verify the value of the solution by conducting interviews.
- (6) Verify the originality of the solution by conducting case research.
- (7) Verify the budget balance by conducting financial simulation.
- (8) Make presentation, explaining the verified solution.

**7. Correspondence relationship between Educational goals and Course goals**

Educational goals of the school		Course Goals	
High level ICT skills	Basic academic skills		
	Specialized knowledge and literacy		
Human skill (Tankyu skill)	Ability to continually improve own strengths	(2)	
	Ability to discover and resolve the problem in society	Problem setting	(1)(3)
		Hypothesis planning	(4)
		Hypothesis testing	(5)(6)(7)
		Practice	(8)
	Fundamental Competencies for Working Persons	Ability to step forward	(1)(3)(4)
		Ability to think through	(5)(6)(7)(8)
Ability to work in a team		(4)(5)(6)(7)(8)	
Professional ethics	(1)(3)(4)		

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

None.

**9. Textbooks (Books required to have to take this course)**

None. Materials will be distributed through the Moodle.

**10. Reference Books (optional books for further study)**

(Only in Japanese. Toshiki Sumitani "Tankyu Method for Social Innovation" Kindle version )

## 11. Evaluation

Goals	Evaluation method & point allocation					
	examination	Quiz	Reports	Presentation	Deliverables	Other
(1)			○		○	
(2)			○		○	
(3)			○		○	
(4)			○		○	
(5)			○		○	
(6)			○		○	
(7)			○		○	
(8)				○		
Allocation			30	30	40	

## 12. Notes

Some assignments, including interviews should be carried out outside classes.

Materials used in class, assignments and worksheets will be distributed through the Moodle.

Assignment outputs should be summarized and delivered with worksheets.

Bring your network-connected PC to the classroom.

## 13. Course plan

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

---

Lesson 1: What is "Tankyu Practice"? (lecture, 90 min.)

---

In this lecture students will understand the basic concept of "Tankyu Practice" and its significance to their research and works in society.

- Introduction to "Tankyu Practice"
- The objective and evaluation of the class
- Real cases of "Tankyu Practice"

---

Lesson 2: Identifying issues #1: From your own experience (lecture and group work, 90min.)

---

Students will list up possible issues they are interested in based on their own experience.

- Introduction to "Identifying Issues"
- Making your own "Lifecycle Chart"
- Interviewing each other
- List up possible issues (individual work)
- Assignments for the next class

---

Lesson 3: Identifying issues #2: Broadening Issue List (lecture and individual work, 90min.)

---

Students will increase the list of possible issues from other perspectives.

- Identifying issues from social trend and by interviewing people
- Identifying issues by researching case examples utilizing ICT
- Broadening the issue list

---

Lesson 4: Identifying issues #3: Narrowing down Issue List (lecture and individual work, 90min.)

---

Students will narrow down the issue list to 2 or 3 candidates by evaluating the significance of issues.

- Evaluating the significance of issues
  - Narrowing down the issue list
  - Assignments for the next class
-



---

Lesson 5: Identifying issues#4: Sharing of issues and forming groups (group work, 90min.)

---

Students will share issues they are interested in and form groups by common interests.

- Sharing of issues interested in
- Forming groups with common interests

---

Lesson 6: Building solution hypothesis (lecture and group work, 90min.)

---

Students will build solution hypothesis using "Tankyu Chart"

- Building awareness of issues
- Idea generation
- Summarizing thoughts into "Tankyu Chart"
- Assignments for the next class

---

Lesson 7:Hypothesis verification #1-1: Customer satisfaction (lecture and group work, 90min.)

---

Students will understand the importance of customer perspective to the solution

- Presentation of solution hypothesis by each group
- Introduction of Hypothesis verification: Customer satisfaction perspective
- Identifying people relevant to the service

---

Lesson 8:Hypothesis verification #1-2: Interviewing (lecture and group work, 90min.)

---

Students will develop interview questions to verify their hypothesis.

- Introduction to interviewing
- Developing questions for interviews
- Interview assignment

---

Lesson9 : Hypothesis verification #2-1: Originality and Competitiveness (lecture and group work, 90min.)

---

Students will understand the importance of originality and competitiveness.

- Discussing implications of interview results
- Verification process from "originality and competitiveness" perspective
- A case example

---

Lesson10 : Hypothesis verification #2-2: Building originality and Competitiveness (group work, 90min.)

---

Students will develop ideas of originality and competitiveness of their hypothesis.

- Research about relevant case examples
  - Developing ideas of originality and competitiveness
  - Assignments for the next class: Verification of hypothesis
-

---

Lesson11 :Hypothesis verification #3-1: Budget balance (lecture and group work, 90min.)

---

Students will understand the importance of budget balance

- Discussiing the implication of verification of hypothesis
- Verification process from "budget balance" perspective
- Case example of financial simulation

---

Lesson12 :Hypothesis verification #3-2: Financial Simulation (group work, 90min.)

---

Students will conduct financial simulation to verify budget balance of their hypothesis

- Conducting financial simulation using template spread sheets
- Identifying other points of verification
- Assignments for the next class

---

Lesson13 : Proposal #1: Developing presentation material (group work, 90min.)

---

Students will develop presentation material explaining their verified solution hypothesis.

- Discussing the implication of verification from three perspectives
- Developing presentation material
- Assignments for the next class: Preparing for presentation

---

Lesson14 :Proposal #2: Presentation (group work, 90min.)

---

Students will deliver the presentation with clarity and impact.

- Presentation by group members
- Feedback from professors

---

Lesson15 :Reflection (lecture and individual work, 90min.)

---

Students will reflect on what they have learned in this class

- Reflection session
  - Assignments of the reflection report
-

**1. Course Code**

2252

**2. Course Title**

Specific Theme Study A

**3. Teacher**

A member of Faculty (Refer to section 14 for assignment process)

**4. Term**

Fall 3 – Spring 3

**5. Course Overview and Objectives**1. Research activities

This subject is taught in research activities. Students will have the opportunity of finding a research subject to pursue. The topic selected during this course will be continued in the 2nd year in “Specific Theme Study B” .

2. Improvement of basic academic skills and basic IT skills

This subject is taught in a participatory style in small groups and with individualized guidance, tailored to individual requirements, to balance the effect of classroom lectures that sometimes tend to be taught in a one-way manner. The objective is to enhance the academic skills and basic IT skills of each student.

3. Improvement of human skills

In addition to academic skills, various human skills required by the society, like communication, common sense behavior, proper word usage, presentations, writing etc. will be improved.

**6. Course Goals (Attainment Targets)**

- (1) Identify a theme of research to be explored in the “Specific Theme Study B” .
- (2) Acquire the academic skills and the IT skills that are necessary for the research theme.
- (3) Improve the human skills that the real world demands.

**7. Correspondence relationship between Educational goals and Course goals**

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

**8. Course Requirements**

Tankyu Practice (2251)

**9. Textbooks**

None

**10. Reference Books**

To be announced by your supervisor.

**11. Evaluation**

Goals	Evaluation method & point					
	Examination	Quiz	Reports	presentation	Deliverables	Activities
(1)				○	○	○
(2)				○	○	○
(3)				○	○	○
Total				40	30	30

**12. Teaching method**

Students enjoy personalized and collaborative learning experiences that includes supervision and support at all stages of the research activities. A range of seminars, workshops, and professional development opportunities will support them during their research journey. However, you should meet with your supervisor at least once a week. The meeting time of the course depends on each laboratory.

**13. Notes**

This is a mandatory subject. All students are required to take it. Students who fail this subject will not be issued “Certificates of Expected Graduation”. Such students also cannot proceed to the 2nd year.

The actual starting date of the course depends on each laboratory. The final presentation will be scheduled in July.

**14. Assignment of Laboratory**

1. Students will be assigned to a laboratory at the start of the course.
2. The assignments are determined as follows:
  - 2-1. The laboratories are introduced to the students
  - 2-2. Each student lists laboratories in their desired precedence order
  - 2-3. The assignments are decided based on these lists, but also taking into account the students’ characteristics, their career plans, the suitability of the desired research topics to them etc.

## 15. Research Outcomes Seminar (Presentation)

### 1. Objective

Specific Theme Study A offers students an opportunity to identify other their research theme and to acquire the academic skills, the IT skills and the human skills through practical activities. In this seminar, students will present their activities and their outcomes.

### 2. Method

- 1) The research theme needs to be discussed with your supervisor.
- 2) The presentation shall include contents like follow.  
Your activities with the Specific Theme Study A.  
Your outcomes, contributions and future works.  
Topic, background and a social issue to solve for the research.  
(Including "Tankyu Chart", if possible)
- 3) The presentation material should be submitted one week before the seminar. Make practice the presentation.

### 3. Shedule

The seminar will be held in July.

### 4. For more Information

More information about this seminar will be published on the Moodle.

**1. Course Code**

2253

**2. Course Title**

Specific Theme Study B

**3. Teacher**

A member of Faculty. Generally, your supervisor for “Specific Theme Study A”

**4. Term**

Fall 1 – Spring 3

**5. Outline and Objectives****1. To acquire the Tankyu practice skills**

Using the Tankyu practice framework and based on the knowledge & skills learned in Specific Theme Study A, students work on their research project to design and implement the proposed system. Finally, the result is summarized as master’s thesis and is presented in the final presentation.

**2. To acquire the advanced professional skills**

This course is taught in a participatory style in small groups and with individualized guidance, tailored to individual requirements, to balance the effect of classroom lectures that sometimes tend to be taught in a one-way manner. The objective is to enhance the advanced professional skills of each student.

**3. Improvement of human skills**

Continued from “Specific Theme Study A”, various human skills required by the society, like communication, common sense behavior, proper word usage, presentations, writing etc. will be improved.

**6. Goals (Attainment Targets)**

- (1) Identify a social issue to solve and propose a solution for it utilizing ICT.
- (2) Acquire advanced professional skills which are necessary to implement the solution.
- (3) Improve the human skills that the real world demands.

**7. Correspondence relationship between Educational goals and Course goals**

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

## 8. Course Requirements

Specific Theme Study A (2252)

## 9. Textbooks

None

## 10. Reference Books

To be announced by your supervisor.

## 11. Evaluation

Goals	Evaluation method & point						
	Examination	Quiz	Reports	Presentation (seminar)	Deliverable (master's thesis)	Research Activities	Other Activities
(1)				○	○	○	
(2)				○	○	○	○
(3)				○	○	○	○
Total				30	30	30	10

## 12. Teaching method

Students enjoy personalized and collaborative learning experiences that includes supervision and support at all stages of the research activities. A range of seminars, workshops, and professional development opportunities will support them during their research journey. However, you should meet with your supervisor at least once a week. The meeting time of the course depends on each laboratory.

## 13. Notes

Presentations at all seminars (research planning seminar, midterm evaluation presentation and final presentation) are required for successful completion of this course. At the completion judging meeting, your evaluation will be determined by all faculty members.

The actual starting date of the course depends on each laboratory. The final presentation will be scheduled in August.

## 14. Final Presentation (Master's Thesis Seminar)

### 1. Objective

In the Specific Theme Study B, a social issue is identified and a solution for it utilizing IT is proposed as a master's thesis. In the master's thesis seminar students will present their work and the outcome of their master's thesis.

### 2. Method

- 1) The master's thesis and its abstract need to be submitted one week before the presentation. ※The presentation file does not need to be submitted.
- 2) The presentation shall include contents like follow.
  - Background and the social issue to be addressed by the research project.
  - The proposed solution of the issue using ICT.
  - The Evaluation (prototype evaluation) and analysis of the Solution.

3. Schedule

The seminar will be held in August.

4. For more Information

More information about this seminar will be published on the Moodle.



**1. Course Code**

2271

**2. Course Title**

Leadership Development Exercises

**3. Teacher**

Toshiyuki Yamanaka

**4. Term and Schedule**

F2 Mon 1~2

**5. Course Overview and Objectives**

In order to achieve vision & goals, leadership plays a crucially important role. Leadership is not only for CEOs or politicians but also for everybody. In this lecture, we focus on practical skills rather than theory. There are many practical exercises. All the lectures are very interactive. After finishing this lecture, every student will be a great leader.

**6. Course Goals (Attainment Targets)**

- (1) The students can understand the importance of leadership and explain what leadership is.
- (2) The students can have their own visions and strategies as a leader.
- (3) The students can implement basic skills such as influencing others.
- (4) The students can make business plans or government policies as a leader.
- (5)
- (6)

**7. Correspondence relationship between Educational goals and Course goals**

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

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

Everybody who wants to become a leader is highly welcome.

**9. Textbooks (Books required to have to take this course)**

To be noticed.

**10. Reference Books (optional books for further study)**

To be noticed.

## 11. Evaluation

Goals	Evaluation method & point allocation					
	examination	Quiz	Reports	Presentation	Deliverables	Discussion
(1)			○			○
(2)			○			○
(3)			○			○
(4)			○			○
(5)						
(6)						
Allocation			50			50

## 12. Notes

Discussion during the class is considered to be very important.

## 13. Course plan

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

---

Lesson 1: Understand the importance of leadership for ICT project	Lecture 30min. Exercise 60 min.
---	---------------------------------

---

Orientation/ Self-Introduction

Typical leaders/Steve Jobs, Nelson Mandela, etc

Why leadership is so important in ICT project?

---

Lesson 2: Elements of leadership & Initial Self-assessment	Lecture 30min. Exercise 60 min.
--	---------------------------------

---

Elements of leadership (conceptual & Human and so on)

Initial Self-Assessment as a leader

---

Lesson 3: Vision	Lecture 30min. Exercise 60 min.
------------------	---------------------------------

---

Vision plays a significant role in leadership

What is vision?

Vision planning exercise

---

Lesson 4: Setting goals	Lecture 30min. Exercise 60 min.
-------------------------	---------------------------------

---

How to set goals effectively

SMART ways to set goals

Goal setting exercise

---

---

Lesson 5: Task & Team building	Lecture 30 min. Exercise 60 min.
--------------------------------	-------------------------------------

---

How to allot task  
Importance of team building  
How to make effective collaborative team

---

Lesson 6: Situational Leadership	Lecture 30 min. Exercise 60 min.
----------------------------------	-------------------------------------

---

What is situational leadership  
How to assess followers situation  
Four categories of situational leadership

---

Lesson 7: Motivation	Lecture 30 min. Exercise 60 min.
----------------------	-------------------------------------

---

Basic motivation theory  
How to motivate others  
Motivation exercise

---

Lesson 8: Power theory	Lecture 30 min. Exercise 60 min.
------------------------	-------------------------------------

---

Power theory is a powerful tool to influence others  
Basic power theory and how to implement it in each occasion  
Power theory exercise

---

Lesson 9 : Feedback	Lecture 30 min. Exercise 60 min.
---------------------	-------------------------------------

---

Feedback is crucially important as a leader but very difficult!  
Effective ways to give feedback to each other  
Feedback exercise

---

Lesson 10 : Coaching	Lecture 30 min. Exercise 60 min.
----------------------	-------------------------------------

---

What is coaching?  
In which occasion coaching is effective?  
Coaching exercise

---

---

Lesson 11 : Facilitation

Lecture 30 min. Exercise  
60 min.

---

Leaders need to facilitate discussions  
Basic skills as a facilitator  
Facilitation exercise

---

Lesson 12 : Cross Cultural Leadership

Lecture 30 min. Exercise  
60 min.

---

Cross cultural leadership plays a significant role in globalized society  
Important elements for cross cultural leadership  
Japanese style & African style & Middle Eastern Style Leadership

---

Lesson 13 : Ethical Leadership

Lecture 30 min. Exercise  
60 min.

---

Ethics is a key factor as a leader  
Japanese ethical leaders such as Kazuo Inamori  
Consider the earth

---

Lesson 14-15 : Presentation as a leader

Presentation 180 min.

---

Present your vision and future goals as a leader one by one

---

**1. Course Code**

2272

**2. Course Title**

Practice of Creativity Development

**3. Teacher**

Toshiki Sumitani

**4. Term and Schedule**

F3 Tue 1~2

**5. Course Overview and Objectives**

It is critical to come up with creative solutions to social/business issues. In this course students will learn and practice various methods to enhance creative thinking with real cases and group works.

Topics will include:

- The Innovator's DNA: 5 skills to be innovative
- Various creative methodologies
- Service Design Thinking

**6. Course Goals (Attainment Targets)**

- (1) Understand and practice various creative methodologies, and become able to apply them in real situations.
- (2) understand the characteristics of innovators and become able to practice some of them to be more creative.
- (3)
- (4)
- (5)
- (6)

**7. Correspondence relationship between Educational goals and Course goals**

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

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

None.

**9. Textbooks (Books required to have to take this course)**

The Innovator's DNA: Mastering the Five Skills of Disruptive Innovators  
 Jeff Dyer , Hal Gregersen , Clayton M. Christensen  
 Harvard Business School Pr

## 10. Reference Books (optional books for further study)

This is Service Design Thinking: Basics, Tools, Cases  
Mark Sickdorn, Jakob Schneider  
Wiley;

## 11. Evaluation

Goals	Evaluation method & point allocation					
	examination	Quiz	Reports	Presentation	Deliverables	Other
(1)			○	○	○	
(2)			○		○	
(3)						
(4)						
(5)						
(6)						
Allocation			30	30	40	

## 12. Notes

Some assignments should be carried out outside classes.  
Materials used in class and assignments will be distributed through Moodle.  
Assignment outputs should be delivered through Moodle.  
Bring your network-connected PC's to the classroom.

Service design workshop (Lectures #7-10) will be conducted by Hiroshi Tamura, co-founder of "Republic inc."

## 13. Course plan

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

---

Lesson 1: Introduction to Creativity development (lecture, 90min.)

---

In this lecture, students will understand the critical elements of developing creativity to come up with innovative solutions to social/business issues.

- Creative thinking mini-case
- Degrees of freedom
- Introduction to Innovator's DNA,

---

Lesson 2: Innovator's skills #1: Associating/Observing (lecture and group work, 90min.)

---

Students will understand and practice 2 of 5 innovators' discovery skills, associating and observing

- What is associating?
- Case Practice: Forced association
- Case Practice: SCAMPER
- Observing customers with 10 questions
- Assignment: observing customers

---

Lesson 3: Innovator's skills #2 Observing (lecture and group work, 90min.)

---

Students will understand and practice one of 5 innovators' discovery skills, observing.

- Sharing findings of observing customers
  - Discussing implications of observing.
-

Lesson 4: Innovator's skills #3 Questioning

(lecture and group work,  
90min.)

---

Students will understand and practice one of 5 innovators' discovery skills, questioning.

- What is questioning?
- Case Practice: Question storming & cultivating question thinking

---

Lesson 5: Innovator's skills #4 Networking:/Experimenting

(lecture and group work,  
90min.)

---

Students will understand and practice 2 of 5 innovators' discovery skills, networking and experimenting.

- What is networking?
- Practice: expanding diversity of your network
- What is experimenting?
- Practice: developing experimenting skills

---

Lesson 6: Innovation Case

(lecture and group work,  
90min.)

---

An innovation case of the Japanese mobile phone industry: NTT DoCoMo i-mode case will be presented. Students will discuss the role of leaders in making innovation happen.

- NTT DoCoMo i-mode Case
- Discussing role of leaders.
- Assignment: research for the service design part

---

Lesson 7-10: Service Design: Creating a novel service ecosystem

(Special Workshop,  
90min x 4.)

---

In this one day workshop, students will practice "service design", a set of process/tools to come up with innovative service to issues. The focus of this workshop will be "Boundary object," a tool to come up with innovative service design.

- Introduction to service design
- What is boundary? What is a boundary object?
- Designing a boundary object
- Stakeholder Analysis
- Scenario Planning
- Sharing of ideas

---

Lesson 11: Final Case #1 Defining innovation themes

(lecture and group work,  
90min)

---

Through lessons #11-#15, students will apply what they learned in this course to a practical case.

- Introduction to the Final Case
  - Forming groups
  - Defining innovation themes
-

---

Lesson 12 : Final Case #2 Analysis and Hypothesis building (lecture and group work, 90min)

---

- Analysis of the current situation. What is the problem to be solved and what are causes?
- Building hypothesis of possible solutions
- Identifying innovation tools to use

---

Lesson 13 : Final Case #3 Designing solutions (lecture and group work, 90min)

---

- Designing innovative solutions, by applying tools learned

---

Lesson 14 : Final Case #4 Developing presentation materials (group work, 90min)

---

(enter your content)

---

Lesson 15 : Final Case #5: Presentation/Reflection (group work, 90min.)

---

- Presentation by group members
  - Feedback from professors
  - Assignments of the reflection report
-



**1. Course Code**

2273

**2. Course Title**

E-Learning

**3. Teacher**

Yi Sun

**4. Term and Schedule**

S1 Fri 3~4

**5. Course Overview and Objectives**

E-learning is an effective tool for education, especially in developing countries, it is possible to provide a high quality education in a low cost, and it's an important means to reduce the gap of education level between the advanced countries and the developing countries. In this course, I will give many topics about e-Learning, and discuss with all of the students, through these discussions to deepen your understanding of e-Learning.

**6. Course Goals (Attainment Targets)**

- (1) Understand the key concepts and benefits of e-Learning.
- (2) Understand how to planning an ICT-enhanced lesson.
- (3) Understand safety, security and well-being considerations when applying ICT in education.
- (4) Understand how to design the e-Learning contents, and can correct and reasonable use the internet resources.
- (5) Understand how to source and evaluate ICT resources for teaching, learning and assessment.
- (6)

**7. Correspondence relationship between Educational goals and Course goals**

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

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

None

**9. Textbooks (Books required to have to take this course)**

None

**10. Reference Books (optional books for further study)**

The reference resources will be announced at the lecture.

## 11. Evaluation

Goals	Evaluation method & point allocation					
	examination	Quiz	Reports	Presentation	Deliverables	Other
(1)				○	○	
(2)			○	○	○	
(3)				○	○	
(4)			○	○	○	
(5)			○	○	○	
(6)						
Allocation			20	50	30	

## 12. Notes

This course does not use a textbook, but course materials will be provided on Moodle.

## 13. Course plan

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

---

Lesson 1: e-Learning introduction (1) (Lecture 90min.)

---

The Guidance of this course.

What is e-Learning?

The history of e-Learning.

The key points of e-Learning.

---

Lesson 2: e-Learning introduction (2) (Discussion 90min.)

---

We will discuss what is e-Learning, and share your definition of e-Learning each other.

---

Lesson 3: Synchronous e-Learning (Lecture/Discussion 90min.)

---

I will introduce the Synchronous e-Learning concept, and discuss how about your understanding.

---

Lesson 4: Asynchronous e-Learning (Lecture/Discussion 90min.)

---

I will introduce the Asynchronous e-Learning concept, and discuss how about your understanding.

---

Lesson 5: The contents of e-Learning (1) (Lecture 90min.)

---

At this lecture, I will tell you how to design the e-Learning contents, include how to find the suitable resource, how to arrange the materials, and how to design the contents to produce the best possible results.

---

Lesson 6: The contents of e-Learning (2) (Discussion/Presentation 90min.)

---

Continue with the previous lecture, discuss what are the good contents of e-Learning. And present your idea about how to create the best e-Learning content.

---

---

Lesson 7: e-Learning and Instructional design (1) (Lecture 90min.)

---

At this lecture, you can learn the Instructional design, include the modern learning theory, learning ecology model, curriculum design etc.

---

Lesson 8: e-Learning and Instructional design (2) (Discussion/Presentation 90min.)

---

Based on the previous lecture, discusses and presents your idea about the Instructional design base on e-Learning.

---

Lesson 9 : e-Learning Systems (Lecture/Discussion 90min.)

---

The overview of the trend ICT technologies, and discuss what kind of e-Learning system could be designed by the trend ICT technologies.

---

Lesson 10 : The data mining of e-Learning (Lecture/Discussion 90min.)

---

The introduction of data mining technologies, and discuss how to use it in an e-Learning system.

---

Lesson 11 : Collaborative learning and e-Learning (1) (Lecture/Discussion 90min.)

---

The concept of collaborative learning, and discuss how do you think about the collaborative learning.

---

Lesson 12 : Collaborative learning and e-Learning (2) (Discussion/Presentation 90min.)

---

Continuing with the previous discussion, summarizing it with your experience, create a collaborative learning plan and present it.

---

Lesson 13 : The security of e-Learning system (Lecture/Discussion 90min.)

---

The introduction of security of e-Learning system, include data security, protection, hacking etc. It also outlines some potential risks for students using ICTs such as cyber bullying, spams, junk-mails, accessing illegal materials, hackers, etc. At the end, students will suggest some ways to minimize these risks of using ICTs.

---

Lesson 14 : Final-term Revision (Lecture/Discussion 90min.)

---

The review of all of this course, and have a Q&A session.

---

Lesson 15 : Term-end Presentation (1) (Presentation 90min.)

---

Confirmation of Understanding/Assessment

---

Lesson 16 : Term-end Presentation (2) (Presentation 90min.)

---

Confirmation of Understanding/Assessment

---

**1. Course Code**

2274

**2. Course Title**

Urban Planning

**3. Teacher**

Nsenda Lukumwena

**4. Term and Schedule**

S2 Thu 5~6

**5. Course Overview and Objectives**

In this course students will:

- (1) learn the basics of urban planning and the role it plays in the development process of cities, both traditional and smart, in the developing countries
- (2) learn space analytics, space evaluation and ways of adapting the basic concepts of urban planning in its three generic stages: strategic planning, tactical planning and implementation in developing countries;
- (3) learn ways to engage into a group project whereby each and every participant will learn from each other during the collaborative process period.

**6. Course Goals (Attainment Targets)**

- (1) Gain analytical and interpretative planning skills likely to support appropriate planning and design interventions.  
Understand the concept of the community master plan? a key concept for undertaking the
- (2) development of planning and its implementation in a fashion that earnestly fits the context of concern.  
Building on (1) and (2), students can thus (i) initiate projects that meaningfully and socially
- (3) impact the targeted society and its urban domain; and (ii) effectively forecast future urban development of the initiated projects.
- (4)
- (5)
- (6)

**7. Correspondence relationship between Educational goals and Course goals**

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

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

None.

**9. Textbooks (Books required to have to take this course)**

None.

## 10. Reference Books (optional books for further study)

1. Human Centered Design Tool Kit 2nd Edition 2011 by IDEO
2. Publications: Urban Planning
3. Creative Cities
4. The City Shaped: Urban Patterns and Meanings By Spiro Kostof
5. Rethinking the informal City?Critical Perspectives from Latina America edited by Felipe Hernandez and Lea K. Allen
6. GIS Organisations and People A Socio-technical Approach by Derek Reeve and James Petch Published in 1999
7. Urban contemporary Planning by Levy, 2015
8. Urban Land Use Planning by Philip R. Berke, David R. Godschalk, and Edward J. King with Daniel A. Rodriguez, 2006.
9. E-Planning, ICTs for Urban Development and Monitoring by Carlos Nunes Silva, 2009
10. Urban Planning, 2nd Edition by Anthony J. Catanese and James C. Snyder, 1977
11. Building Smart Cities, Analytics, ICT, and Design Thinking 2016 by carol L. Stimmel, CRC Press

## 11. Evaluation

Goals	Evaluation method & point allocation					
	examination	Quiz	Reports	Presentation	Deliverables	Other
(1)		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
(2)		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
(3)			<input type="radio"/>	<input type="radio"/>		
(4)						
(5)						
(6)						
Allocation		10	60	30		

## 12. Notes

No exam is required. Term report and presentation are required instead.  
Course reading references will be provided to students timely.

## 13. Course plan

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

---

Lesson 1: Overview of the evolution of cities and urban planning as well as recent trends in the practice of urban planning Part-1 (Lecture 90 min)

---

This lesson presents a Synoptic overview of cities in history, from the legacy of the past to contemporary cities.

---

Lesson 2: Overview of the evolution of cities and urban planning as well as recent trends in the practice of urban planning Part-2 (Lecture 90min)

---

The lesson reviews the City generic forms in history?from organic patterns to the grid pattern to the city as a diagram, to the grand manner and the skyline.

---

Lesson 3: The role of urban planning in cities development process over the time (Lecture 90min)

---

This lesson explores the contribution of urban planning to the development process of cities and regions in the past and today, in developed and developing countries, from traditional to smart cities.

---

Lesson 4 Space Analytics and the use of ICTs in urban planning (Lecture 90min)

---

The lesson introduces students to the basics of Space Analytics, its application to urban planning, as well as the role of ICTs in the planning process.

---

Lesson 5: Introduction to Smart Cities (Lecture 30 min, Interactive 60min)

---

Discussing the framework of smart cities. Students prepare and engage in a discussion on smart cities both in the developed and developing countries.

---

Lesson 6: Functional Planning - Land use systems (Lecture 90min)

---

Reading into Physical planning and urban design and urban development. Students will learn the difference between urban planning and urban design.

---

Lesson 7: Functional Planning - Master plan (Lecture 90min)

---

Through the overview of the community master plan (or Communitywide), students will gain understanding of the land use Design and of the Real Estate Development.

---

Lesson 8: Functional Planning - Public Infrastructure (Lecture 90min)

---

Students will learn about Public Infrastructure, values, and communities sustainability.

---

Lesson 9: Functional Planning - Urban Transportation (Lecture 90min)

---

Students learn about Urban Public Transportation planning, systems and delivery.

---

Lesson 10: Summary of lessons 6-9 (Lecture 90 min)

---

Reviewing of Lessons 6 through 9. Students comparatively discuss the applicability of lessons learned to specific cases in their own countries and build up a case study to be presented at next class.

---

---

Lesson 11: Presentation of the case study (Lecture 30 min,  
Presentation 60 min)

---

Each student is asked to present a case in which they apply skills gained from the previous lessons.

---

Lesson 12: Technology Planning (Lecture 90 min)

---

Students will learn how to associate technologies (from the introduction of computers into planning to ICTs) to urban planning?be it physical, social or environmental.

---

Lesson 13: Lecture by Guest Professor -1 (Lecture 90 min)

---

Students will learn how to use Urban Planning Analysis tools and Simulation to include forecasting using statistical program (R).

---

Lesson 14: Lecture by Guest Professor -2 (Interactive Lecture 90  
min)

---

Students interact with the professor and each other through application of the learned tools in the previous lessons

---

Lesson 15: Presentation and Evaluation (Presentation, 90 min)

---

Students make their final presentation for evaluation.

---

**1. Course Code**

2277

**2. Course Title**

Geographic Information System

**3. Teacher****4. Term and Schedule**

F3 Intensive course (Refer the timetable)

**5. Course Overview and Objectives**

In this class, student learn the fundamentals of remote sensing and GIS techniques, and the data utilization of free satellite images and geospatial data sets with open source software “Quantum GIS (QGIS)”. And also student learn the basic field survey technique with GPS device through the short field trip.

**6. Course Goals (Attainment Targets)**

- (1) To understand and explain the basics of remote sensing and GIS
- (2) To utilize and analyze satellite/ GIS datasets by open source software “QGIS  
To conduct basic field survey (i.e. to prepare a field map, to get coordinates by portable GPS device, to compare the field condition (land cover, road, river, etc.) with satellite images and integrate dataset on QGIS for practical satellite data utilization
- (3)
- (4)
- (5)
- (6)

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

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

Basic skills of Windows Power Point, Excel, Word and etc.

**9. Textbooks (Books required to have to take this course)**

None

(Tutorial manuals will be provided in the class.)



## 10. Reference Books (optional books for further study)

Reference books will be introduced in the class.

## 11. Evaluation

Goals	Evaluation method & point allocation					
	examination	Quiz	Reports	Presentation	Deliverables	Other
(1)			○	○		
(2)			○	○		
(3)			○	○		
(4)						
(5)						
(6)						
Allocation			70	30		

## 12. Notes

- 1) Report includes a self-tutorial manual which describes each step of image analysis, GIS data management.
- 2) Presentation material includes the achievement from the course. Template of the presentation material will be provided in the class.

## 13. Course plan

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

---

Lesson 1: Fundamentals of remote sensing/ GIS Lecture (90 min.)

---

Student learn the fundamental theories of remote sensing/ GIS and examples on mineral and oil gas resources, forestry, agriculture, climate changes and natural disasters.

---

Lesson 2: Downloading satellite/GIS data from website Exercise (90 min.)

---

Student learn how to download various satellite/ GIS data from website.

---

Lesson 3: Installing QGIS and importing satellite/GIS data to QGIS Exercise (90 min.)

---

Student learn how to install QGIS and import various satellite/ GIS data.

---

Lesson 4: Basic manipulation of QGIS Exercise (90 min.)

---

To edit satellite data such as Landsat, ASTER, Sentinel-2 and SRTM/DEM

---

Lesson 5: Basic manipulation of QGIS

Exercise (90 min.)

---

To make and edit vector data (Point, Line and Polygon)

---

Lesson 6: Topographical analysis

Exercise (90 min.)

---

Student make maps of slope, aspect, hill-shade, relief and etc.

---

Lesson 7: Geo-referencing

Exercise (90 min.)

---

Student import a Google Earth Image and scanned image to QGIS using geo-reference points.

---

Lesson 8: Preparation of field survey map

Exercise (90 min.)

---

Student prepare the field survey map which is composed of satellite image with grids, vector layers, legend, scale and etc.

---

Lesson 9: Field survey

Exercise (90 min.)

---

Student conduct a short field survey to get coordinates, observe surface conditions to compare satellite images.

---

Lesson 10: Field survey

Exercise (90 min.)

---

Student conduct a short field survey to get coordinates, observe surface conditions to compare satellite images.

---

Lesson 11: Field survey

Exercise (90 min.)

---

Student conduct a short field survey to get coordinates, observe surface conditions to compare satellite images.

---

Lesson 12 : Integration of field data with various geospatial data

Exercise (90 min.)

---

Student import GPS data, make excel spread sheets to summarize field survey data.

---

Lesson 13 : Integration of field data with various geospatial data

Exercise (90 min.)

---

Student import GPS data, make excel spread sheets to summarize field survey data.

---

Lesson 14: Summary, question and answer

Discussion (90 min.)

---

Student make presentation material to show the achievement from the class, future plan and etc.

---

Lesson 15: Presentation

Presentation (90 min.)

---

Content and performance of the presentation are evaluated how understand this course.

---

**1. Course Code**

2281

**2. Course Title**

ICT4D Exercises

**3. Teacher**Takashi TSUJI  
Other invited Instructors may also join the course occasionally.**4. Term and Schedule**

S1 Wed 3~4

**5. Course Overview and Objectives**

The objective of this course is to obtain the basic idea of designing a development program/project, which utilize ICT. ICT can be an effective tool to resolve the outstanding problems, issues if it is applied properly. This course also describes some methods of SDLC (Systems Development Life Cycle) and compare it with PCM (Project Cycle Management) and Tankyu Chart.

**6. Course Goals (Attainment Targets)**

- (1) To understand the whole part of project planning using PCM method.
- (2) To become able to plan, design and create a practical development project, utilizing ICT.
- (3) To become able to run and manage the development project properly, utilizing ICT.
- (4)
- (5)
- (6)

**7. Correspondence relationship between Educational goals and Course goals**

Educational goals of the school		Course Goals	
High level ICT skills	Basic academic skills		
	Specialized knowledge and literacy	(2)(3)	
Human skill (Tankyu skill)	Ability to continually improve own strengths		
	Ability to discover and resolve the problem in society	Problem setting	(1)(2)(3)
		Hypothesis planning	(1)(2)(3)
		Hypothesis testing	
	Fundamental Competencies for Working Persons	Practice	
		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)**

2286 Social Development (Basic knowledge on PCM method is required)

**9. Textbooks (Books required to have to take this course)**

None

**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				50	50	

## 12. Notes

This course does not use a textbook, but course materials will be provided on Moodle.

## 13. Course plan

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

---

Lesson 1-2: Introduction of Social Development (Lecture, 90 min. / Exercise, 90 min.)

---

As the start of the course, the goal of this course and evaluation method are provided after self-introduction.

Then, the students learn general idea and overview of ICT4D, and JICA's approach to ICT4D.

Pick up 1 issue and try to make a simple Problem Tree which describes the cause of the issue.

---

Lesson 3-4: Example of ICT4D Project (Lecture, 90 min. / Discussion, 30 min.)

---

The example of ICT4D Project is introduced by JICA staff who has experience of implementing the projects in JICA overseas office. The lecturer has a plenty of experience of planning, conducting, managing and evaluating the development projects, and can give you practical examples. After the lecture, Q&A session will be held for deepening your understanding. Understanding the real example of the actual ICT4D project, the students can obtain the realistic knowledge and skill to design their plan. After the lecture, Q&A session, discussion and presentation session will be held for deepening your understanding.

---

Lesson 5-6: System Development Overview (Lecture, 60 min. / Discussion, 60 min.)

---

The system life cycle starts from the very beginning of making whole strategy phase through to the end of operation of the system. The students can learn each phase of the system life cycle and basic types of this cycle management. Also learn the relation between the whole system and each function.

Then the students have a group discussion to analyze the implemented functions which are actually used in Japan. It will give the students much help to understand the functions with taking actual example of the currently running system.

---

Lesson 7-8: Introduction of SDLC (Lecture, 90 min. /  
Exercise, 90 min.)

---

System development process and some typical types of system development cycle management method will be explained, and the students can grasp each feature, compare them and learn the difference.

Following the lecture, the students will exchange their opinions each other and clarify the key factors for SDLC management.

---

Lesson 9-10: Visit to JICA Kansai Centre (Lecture, 60 min. /  
Discussion, 60 min. /

---

Students will be invited to an observation tour to JICA Kansai Centre, one of the JICA facilities which provide the training program for participants from developing countries all over the world. JICA staff will introduce and explain the entire facility, training course and take you a tour around the Centre.

Then students have a chance to exchange their opinions and discuss with actual participants of JICA training program from developing countries and the related staffs in JICA Kansai Centre which will be a good opportunity to get some ideas of their future development project plan.

---

Lesson 11-12: Issues related to ICT (Lecture, 90 min. /  
Exercise, 90 min.)

---

Some other examples of the development project which relates to ICT will be shown but all of them has some problems basically. After introducing these examples, the students will discuss the problems and try to improve the project. By following the PCM method, the students can review how well they have understood the method and find whether they can explore their own idea to the actual project planning.

---

Lesson 13-14: Review on complete phases of PCM and Workshop (Lecture, 60 min. /  
Exercise, 120 min.)

---

The rest phases of the PCM method will be introduced and explained to look over the whole process of PCM. After the lecture, final group work will be conducted to complete the ICT4D project plan.

---

Lesson 15: Final Presentation, Summary of the Course (Presentation, 80 min. /  
Discussion, 10 min.)

---

Each group will give their final presentation which explains their ICT4D project plan. The Q&A and the exchange of their opinions and comments sessions will follow the presentation. After these sessions, discussion by all students is conducted in order to recognize the result of this course. Any kind of comments are also welcome for future improvement of this course.

---

**1. Course Code**

2283

**2. Course Title**

ICT4D Special Experiment 2

**3. Teacher****4. Term and Schedule**

F3,S1,S2 Fri 2.5

**5. Course Overview and Objectives**

Objective of the course is to gain professional abilities to create, implement, monitor, and evaluate viable and appropriate e-Governance and other ICTD project/programme through familiarizing real life cases of e-Governance projects/programme in the developing countries. The course will be “hands-on” and will be conducted as a “practicum” rather than series of lectures. The practicum participants are expected to fully participate in the discussions and other interactions which are expected during the course of the practicum.

**6. Course Goals (Attainment Targets)**

- (1) Understand fundamental concept of programme/project and its formulation
- (2) Understand key characteristics of best and worst examples in the e-Governance/ e-Government implementations
- (3) Identify real problems of public administration and public service delivery and give possible solutions /remedies through using ICT tools
- (4) Familiarize with creation of realistic project document to initiate a project/initiative in e-Governance
- (5) Understand real life challenges to implementing e-Governance/Government
- (6)

**7. Correspondence relationship between Educational goals and Course goals**

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

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

2281 ICT4D\_Exercises(Program\_Management)

Or equivalent professional and/or experiences or approval from the lecturer.

**9. Textbooks (Books required to have to take this course)**

TBD (Since this is practical course, no specific text book is assigned. However, reference/recommended project documents and other reading materials will be provided in lieu of the text books).

## 10. Reference Books (optional books for further study)

TBD (Since this is practical course, no specific text book is assigned. However, reference/recommended reading materials may be provided in lieu of the text book. Students are also encouraged to read/research relevant materials while compiling their project documents.

## 11. Evaluation

Goals	Evaluation method & point allocation					
	examination	Quiz	Reports	Presentation	Deliverables	Other
(1)				○	○	
(2)				○	○	
(3)				○	○	
(4)				○	○	
(5)				○	○	
(6)						
Allocation				40	60	

## 12. Notes

The practicum course is designed to have intensive "in-person" lectures/discussions during the first and last weeks of the school semesters (Spring 1st semesters and Spring 2nd semester). Those "in-person" sessions are supplemented by weekly on-line sessions which will be conducted either from the U.S. or from other countries where the course instructor has assignments in.

While the on-line portion of the course is expected to use video conferencing facility, the

## 13. Course plan

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

---

Lesson 1: Introduction to the e-Governance/e-Government Practicum Lecture 90 min

---

- \* Expectation for the course and explanation of practicum structure
- \* General Introduction among group

---

Lesson 2: Definition of the ICT for Development and its history Lecture 90 min

---

- \* General Introduction of ICT and ICT For Development
- \* ICT for Development and its history
- \* Open discussion about history of ICT for Development and how international communities and different developing countries have taken until now

---

Lesson 3: Definition of e-Governance and e-Government Lecture/Discussion 90min

---

- \* Difference between Governance and Government
  - \* Historical perspective of difference between e-Governance and e-Government
  - \* Open discussion of e-Governance and e-Government definition
-



Lesson 4: Emerging Trends in e-Governance/Government

Lecture/Discussion 90min

- 
- \* Discussion about emerging trends such as utilizing mobile for development (m-Government and m-Governance), ICT enabled payment systems, big data, open data, etc..
  - \* Open discussion of emerging trends in e-Governance/e-Government and their impact to both developed and developing world
- 

Lesson 5: Keys to effective e-Governance and e-Government Solutions

Lecture/Discussion 90min

- 
- \* Open discussion of key for effective e-Governance and e-Government solutions
  - \* Importance of Leadership (organization, government, etc.)
- 

Lesson 6: Keys to effective e-Governance and e-Government Solutions – cont'd

Lecture/Discussion 90min

- 
- \* Open discussion of key for effective e-Governance and e-Government solutions (continued)
  - \* Appropriate Technology vs Disruptive Technology (what would be the most effective ways of implementing e-Governance/e-Government projects/solutions?)
- 

Lesson 7: Identification of e-Governance/e-Government Programme/Projects

Lecture/Discussion 90min

Identification of e-Government/e-Governance projects

- 
- \* Creation of sample Tankyu charts for potential problem and solutions.
  - \* Review of sample e-Governance projects
  - \* Difference between Programme and Projects
  - \* Discussion
- 

Lesson 8: Introduction to the Project Document - Pt. 1

Lecture/Discussion 90min

Review different outlines/components of Project Document(s)

- 
- \* Explanation of effective project documents (components and attributes)
  - \* Presentation of sample e-Governance/e-Government project documents from major donors.
  - \* Discussion of Outputs and Outcomes and respective indicators
  - \* Discussion
- 

Lesson 9: Introduction to the Project Document - Pt. 2

Lecture/Discussion 90min

Review different outlines/components of Project Document(s)

- 
- \* Presentation of sample e-Governance/Government project documents from major donors (by students)
  - \* Discussion of Outputs and Outcomes and respective indicators
  - \* Presentation of sample project document templates from different donors
  - \* Discussion
-

---

Lesson 10: Introduction to the Project Document - Pt. 3 Lecture/Discussion 90min

---

Review different outlines/components of Project Document(s)

- \* Presentation of project document templates from major donors (by students)
- \* Discussion of Outputs and Activities and respective indicators
- \* Discussion

---

Lesson 11: Creation of situational Analysis and other environmental variable – Pt.1 Lecture/Discussion 90min

---

Creation of situational Analysis and other environmental variables

- \* Explanation of critical component for situational analysis and other environmental variables in project documents.
- \* Discussion of effective and concise situational analysis and other environmental variables in project document

---

Lesson 12: Creation of situational Analysis and other environmental variable – Pt.2 Lecture/Discussion 90min

---

Creation of situational Analysis and other environmental variables

- \* Presentation of situational analysis (compiled as an assignment to Lesson 9)
- \* Discussion (Critique)

---

Lesson 13: Creation of Programme/Project Logframe – Pt.1 Lecture/Discussion 90min

---

Creation of Programme/Project activities

- \* Identification and compilation of programme/project Impact/Outcomes for the project
- \* Clarifying and differentiating Impact and Outcomes and respective indicators
- \* Discussion

---

Lesson 14: Creation of Programme/Project Logframe – Pt.2 Lecture/Discussion 90min

---

Review different outlines/components of Project Document(s)

- \* Presentation of project document templates from major donors (by students)
- \* Discussion of Outputs and Activities and respective indicators
- \* Discussion

---

Lesson 15: Creation of Programme/Project Logframe – Pt.3 Lecture/Discussion 90min

---

Creation of Programme/Project activities

- \* Presentation of compiled programme/project activities for the project
  - \* Discussion (Critique)
-

---

Creation of Programme/Project Log Frame

- \* Presentation of compiled programme/project activities for the project
- \* Discussion (Critique)
- \* Compilation of Log Frame from Impacts/Outcomes/Outputs/Activities

---

Creation of Programme/Project Log Frame

- \* Presentation of completed Log Frame for the project
- \* Discussion (Critique)

---

Budgeting Programme/Project

- \* Sample criteria for budget.
- \* Discussion of overhead and other line items
- \* Realistic costing based on sample proposed activities
- \* Discussion

---

Risk Analysis and Mitigation

- \* Sample risks from different projects
- \* Discussion of potential risks in e-Government/Governance projects
- \* Mitigation Methodology
- \* Discussion

---

Project Management Tool

- \* Explanation of different project management tools
- \* Potential pitfalls for project delay and stagnation
- \* Compilation of time bound activity chart (Gaunt chart and others)
- \* Discussion

---

Project Management Tool

- \* Explanation of different project management tools
  - \* Potential pitfalls for project delay and stagnation
  - \* Compilation of time bound activity chart (Gaunt chart and others)
  - \* Discussion
-

Lesson 22: Funding Programme/Projects - Pt.1

Lecture/Discussion 90min

---

Funding Programme/Project

- \* How best to fund project/programme?
- \* Identification for donors/supporters for specific projects
- \* Discussion

---

Lesson 23: Funding Programme/Projects - Pt.2

Lecture/Discussion 90min

---

Funding Programme/Project

- \* Current Trends of major ICTD donors
- \* Discussion about creative ways to funding projects (new emerging tools)

---

Lesson 24: Funding Programme/Projects - Pt.3

Lecture/Discussion 90min

---

Funding Programme/Project

- \* Presentation of donor matrix of targeted countries
- \* Discussion

---

Lesson 25: Funding Programme/Projects - Pt.4

Lecture/Discussion 90min

---

Funding Programme/Project

- \* Presentation of funding mechanism/strategy for compiling projects/programme
- \* Discussion (Critique)

---

Lesson 26: Project Presentation –Preparation

Lecture/Discussion/Presentation 90min

---

Project Presentation – Lecture on effective presentation

- \* Techniques for better presentation
- \* Discussion (Critiques) of sample presentations

---

Lesson 27: Project Presentation – Elevator Talk

Presentation 90min

---

Presentation for projects (elevator talk)

- \* Selling compiled projects in one minutes.
  - \* Peer Review
-

Presentation for projects (full presentation)

- \* Presentation for compiled projects and Peer Review
- \* Discussion (Critique)

Presentation for projects (full presentation)

- \* Presentation for compiled projects and Peer Review
- \* Discussion (Critique)

Project Presentation – Market Place

Way forward – Toward realization of programme/projects

- \* Market Place
  - \* Discussion of how to move ahead with the compiled programme/projects
-

**1. Course Code**

2285

**2. Course Title**

ICT for Developments

**3. Teacher**

Tomonari Takeuchi

**4. Term and Schedule**

F1 Thu 3~4

**5. Course Overview and Objectives**

The objective of this module is to understand the opportunities and challenges of utilization of Information and Communication Technology (ICT) for achieving sustainable development in the developing countries through recognizing and analyzing what ICT4D projects are like with using relevant conceptual frameworks and/or models.

**6. Course Goals (Attainment Targets)**

- (1) To be able to explain the overview of ICT4D and the worldwide trend of ICT4D attempts
- (2) To acquire skills and knowledge about conceptual frameworks and models to analyze success and failure factors of ICT4D projects from socio-technical point of view
- (3) To understand relevant point of view to plan sustainable ICT4D projects
- (4)
- (5)
- (6)

**7. Correspondence relationship between Educational goals and Course goals**

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

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

None

**9. Textbooks (Books required to have to take this course)**

None

**10. Reference Books (optional books for further study)**

Duncombe, R. (2006) 'Analysing ICT Applications for Poverty Reduction via Micro-enterprise Using the Livelihoods Framework', Development Informatics Working Paper Series, Paper No. 27, IDPM, University of Manchester.

## 11. Evaluation

Goals	Evaluation method & point allocation					
	examination	Quiz	Reports	Presentation	Deliverables	Other
(1)			○	○		
(2)			○	○		
(3)			○	○		
(4)						
(5)						
(6)						
Allocation			70	30		

## 12. Notes

1. In this module, there is no textbook. Handouts relevant to each theme will be distributed.
2. The contents of this module are relatively abstract because what this module mainly introduces are frameworks and models. In other words, you are required to think by yourself to relate the conceptual frameworks and practical projects as well as your own experience.
3. About the assignment, please read the following;

### ■ Assignment1 : Presentation (30%)

Group presentation will be conducted in the middle of the course. In advance, several groups will be made according to individual interest in the development field (theme) such as education, health, agriculture, poverty reduction, industrial development, etc. Each group will choose a specific kind of ICT4D project such as m-banking, e-health (m-health), e-learning (m-learning), e-government (m-government), impact sourcing, FOSS4D(Free Open Source Software for Development) application, etc. Each group will research on the selected ICT4D attempt and prepare for the presentation and make a relevant handout. Then, each group will make 15-20 minutes presentation including Q &A with the relevant presentation materials.

### ■ Assignment2 (Report) : 3500-5000 words Essay (70%)

Write an essay (3500-5000 words) on the theme that you do not choose for the assignment1 (Group presentation). The essay should include all of followings.

1. Abstract
2. The overview of the specific ICT4D project(s) selected as a case study in the selected field in specific country or region.
3. The outcome of the project(s).
4. Your evaluation on whether the project(s) is success (partially success) or failure (partially failure) and the reasons for your evaluation.
5. The analysis on success or failure factors
6. The lessons learned from the project(s) and/or the suggestions to improve the success rate of the ICT4D project(s).

## 13. Course plan

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

Lesson 1: Overview of ICT4D

Lecture 90 min.

---

In this session, various kinds of ICT4D projects in different fields are introduced to grasp what ICT4D is in the current world. The overview, impact, opportunities and challenges are explained and discussed. It is expected that each of you will share your experience working for and/or researching on ICT4D projects with the others, if any. The overview and one of the important notions in ICT4D that "ICT is not a SILVER BULLET (Panacea), but a powerful tool for development" are roughly understood at the end of the session.

---

---

## Lesson 2: Success and Failure Factors of ICT4D Project

Lecture 40 min. Exercise  
50 min.

---

In this session, the reason of success and failure of ICT4D projects are discussed through analyzing ICT4D project case study as exercise. There are several factors affecting success and failure. To understand such factors, frameworks and methods are established by some scholars. Before introducing such frameworks in this module, it is important to think about a way to analyze by yourselves.

1. What is success and failure of ICT4D projects?
  2. What are factors to affect success and failure of ICT4D project?
  3. Exercise using case study to analyze success and failure factors
  4. Introduction of Onion Ring model
- 

## Lesson 3: Information Provision and Development Impact 1

Lecture 40 min. Exercise  
50 min.

---

There are many ICT4D projects aiming to provide information for people who have few opportunities to receive valuable information. The projects, such as projects to distribute market information for rural farmers and projects for distance education, contribute to reducing the gap called digital divide. In this session, what kinds of information are really valuable for beneficiaries is discussed. This session also includes discussion on what is required to achieve expected impacts of the ICT4D projects in order for beneficiaries to utilize provided information.

---

## Lesson 4: Information Provision and Development Impact 2

Lecture 40 min. Exercise  
50 min.

---

Can ICT4D projects aiming to reduce digital divide necessarily contribute to minimizing the information gap between city and rural areas? Or such projects reinforce the digital divide and even create a new gap? It depends on many factors such as educational level, economic power, social status, etc. This session focuses on this point of view through reviewing relevant theories and practices.

1. How does ICT affect the have and the have-not?
  2. What is required to achieve development impact by ICT4D project?
  3. Introduction of conceptual frameworks and models (ICT4D Value Chain model)
  4. Exercise using case study to apply conceptual frameworks and models to analyze ICT4D projects
- 

## Lesson 5: ICT4D Project and Design-Reality Gap

Lecture 40 min. Exercise  
50 min.

---

In many cases, ICT4D project failure is caused by a gap between project design and reality which is named "Design – Reality Gap" by Heeks (Director of ICT4D master course in University of Manchester). In this session, factors which cause Design Reality Gap will be understood through case study.

1. What is Design-Reality Gap
  2. Important factors for ICT4D projects
  3. Exercise using case study to apply conceptual frameworks and models to analyze ICT4D projects
-



---

**Lesson 6: Project Design for ICT4D Project**

Lecture 40 min. Exercise  
50 min

---

In this session, a check list is introduced to minimize the Design-Reality Gap to design ICT4D projects. Exercise using case studies to use the check list will be conducted and how to minimize the Design- Reality Gap is also discussed.

1. Introduction check lists to minimize the Design-Reality Gap (ITPOSMO and OPTIMIZM check lists)
  2. What are drawbacks of factor approaches?
  3. Introduction of the other frameworks and models.
  4. Exercise using case study to apply conceptual frameworks and models to analyze ICT4D projects
- 

**Lesson 7: Approach for ICT4D Project**

Lecture 50 min. Exercise  
40 min

---

There is a problem of project planning approach behind the Design-Reality Gap in ICT4D projects. In this session, such a problem will be explained. To analyze ICT4D project success and failure from the difference of approaches, characteristics of several approaches in both information system development and national development are introduced.

1. What is an appropriate approach to design ICT4D project?
  2. Different between Supply-Driven and Demand-Driven approaches.
  3. Different between Hard and Soft approaches.
  4. User-Oriented approach in information system development and participatory approaches in national development.
  5. Exercise using case study to apply conceptual frameworks and models to analyze ICT4D projects
- 

**Lesson 8: Success factors for ICT4D**

Lecture 40 min.  
Exercise/Discussion 50

---

In this session, main success factors for ICT4D projects are explained through analyzing successful ICT4D projects such as M-PESA and Ushahidi in Kenya, Digital Green in India, and so on.

1. What is the success factors for M-PESA ?
  2. What is the success factors for Ushahidi ?
  3. What is the success factors for Digital Green ?
  4. ICT4D Champion
- 

**Lesson 9 : 【Assignment 1】 Group Presentation**

Presentation 90 min.

---

In this session, as the assignment 1, Group Presentation is conducted. Each group makes a 15-20 minutes presentation and shares the research output with other groups.

---

---

**Lesson 10 : Evaluation of ICT4D Project****Lecture 40 min. Exercise  
50 min.**

---

In this session, methods of evaluation for ICT4D projects are introduced. How to evaluate ICT4D projects is somewhat emerging field and not firmly established. Issues on the evaluation methods are discussed from not information system development but national development.

1. Evaluation methods for ICT4D project
2. Issues on evaluation of ICT4D project
3. Introduction of several evaluation index and methods for national development
4. Exercise using case study to apply evaluation methods to analyze ICT4D projects

---

**Lesson 11 : MDGs/SDG s and ICT4D****Lecture 40 min. Exercise  
50 min.**

---

In this session, relation between Millennium Development Goals (MDGs) /Sustainable Development Goals and ICT is discussed. In each development themes, what kinds of attempts are implemented and how such attempts contribute to achieving MDGs/SDGs are explained. The class will be divided into two teams (like ICT4D optimist and ICT4D pessimist) and the debate on “Whether or not national budget should allocate for ICT4D? ” is conducted. .

1. What is MDGs/SDG s ?
2. Relation between MDGs/SDGs and ICT4D
3. Debate on “Whether or not national budget should allocate for ICT4D? ”

---

**Lesson 12 : Practice to Analyze ICT4D Projects and Approach for  
Research (Essay Writing)****Lecture 40 min. Exercise  
50 min.**

---

1. Introduction of ICT4D Project (some case studies will be announced in advance, please collect information about each project before this session)
2. Practice to analyze the ICT4D Project and make a group presentation

The other part is “Approach for Research (Essay Writing)”. To support students to write an essay (Assignment2) with sufficient contents, important viewpoints and pitfalls for ICT4D research are introduced.

---

**Lesson 13 : Trend of ICT4D****Lecture 90min.**

---

In this session, there are two topics. The one is “Trend of ICT4D”. In international society, ICT4D became a very important agenda along with technology evolution especially at the Kyushu-Okinawa Summit in 2000. Then, this agenda was discussed at the World Summit on the Information Society in 2003 and 2005. In this session, such a trend of ICT4D agenda in international society is explained. To grasp the big picture of the ICT4D trend enables you to plan appropriate ICT4D projects. The other one is more practical trend of ICT4D in the context of recent progress of technology and innovation.

1. International society and ICT4D
  2. Trend of ICT4D (from ICT4D 1.0 to ICT4D 2.0)
  3. Reverse Innovation
  4. Future trend of ICT4D (Internet → Social Media → Social Lab)
-

## Lesson 14 : ICT4D from Different Perspectives

Lecture 60 min.  
Discussion 30 min.

---

In this session, some guest speakers are invited from different organizations such as Japan International Cooperation Agency (JICA), private ICT companies, and NGOs. They will make presentation to explain their activities on ICT4D. It will provide you with different perspectives on ICT4D. In addition, knowledge on Japanese ODA and JICA's ICT4D projects will help you work for ICT4D field in future.

1. Presentations by some guest speakers from different organizations
  2. Discussion with the guest speakers
- 

## Lesson 15 : ICT4D in the Next Generation

Lecture 45 min.  
Discussion 45 min.

---

In this session, both positive and negative impact of recent technology such as IoT, AI, 3D printing, etc. will be explained in the context of globalization. Then, discussion will be made to consider how to avoid the negative impact and what ICT policy is required in the future.

1. Positive and negative impact of recent technology such as IoT, AI, 3D printing, etc.
  2. Risks of enclosure by huge companies
  3. Required ICT policy to avoid the risks for developing countries in the future
  4. Summary of this module
-

**1. Course Code**

2286

**2. Course Title**

Social Development

**3. Teacher**Takashi TSUJI  
Other invited Instructors may also join the course occasionally.**4. Term and Schedule**

F2 Thu 1~2

**5. Course Overview and Objectives**

The main objective of this course is to understand a method which enables you to make a plan of social development project effectively.

In developing countries, there are many social issues that are not resolved easily such as poverty, education, health care, environmental problem, and so on. Students can learn and grasp the key factors in PCM (Project Cycle Management) method to form a social development project, in order to resolve these issues.

This course contains some exercises which students are basically divided into several groups and work together. Number of groups and number of persons in a group may vary depending on the total number of students, and diversity of their interests.

**6. Course Goals (Attainment Targets)**

- (1) To understand the basic knowledge of social development.
- (2) To become able to explain basic phase in PCM, as a tool for planning social development project.
- (3) To become able to explain the importance of key factors which should be considered when the project plan is made.
- (4) To become able to make a plan of social development project along with PCM method.
- (5)
- (6)

**7. Correspondence relationship between Educational goals and Course goals**

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

None

**9. Textbooks (Books required to have to take this course)**

None

## 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				50	50	

## 12. Notes

This course does not use a textbook, but course materials will be provided on Moodle.

## 13. Course plan

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

---

Lesson 1-2: Introduction of Social Development (Lecture, 90 min. / Exercise, 90 min.)

---

As the start of the course, the goal of this course and evaluation method are provided after self-introduction.

Then, the students learn general idea and overview of social development. Comparing with the Tankyu Practice, the very beginning phase of the PCM (Project Cycle Management) is introduced. In latter part, the students will try to draw a Problem Tree, which describes the issues/problems in a logical structure.

---

Lesson 3-4: Example of Social Development Project in Africa (1) (Lecture, 80 min. / Discussion, 40 min. /

---

The example of social development project in Africa is introduced by former Chief Representative of JICA Rwanda Office.

Understanding the real example of the actual social development project in Africa, the students can obtain the realistic knowledge and skill to design their plan. After the lecture, Q&A session, discussion and presentation session will be held for deepening your understanding.

---

Lesson 5-6: JICA's assistance, Schemes, Basics of PCM (Lecture, 90 min. / Discussion, 30 min. /

---

Along with the previous Lessons, JICA's assistance, Schemes and other basic phases of PCM is introduced. After the lecture, students will draw a Problem Tree which is based on the example of the Project, which can be effective to understand the logical construction of the Problem Tree.

---

Lesson 7-8: Discussion on the Example

(Lecture, 90 min. /  
Exercise, 90 min.)

---

Review of the JICA's assistance by categories, students will deepen their understanding on the Project type of JICA. Then more details of PCM phase will be explained. After the lecture, students will explore their PCM workshop to the Objective Tree, and go back to the Stakeholder Analysis.

---

Lesson 9-10: Example of Social Development Project in Africa (2)

(Lecture, 90 min. /  
Discussion, 30 min. /

---

The example of Social Development Project in Africa is introduced by former Chief Representative of JICA Sudan Office.

Understanding the real example of the actual social development project in Africa, the students can obtain the realistic knowledge and skill to design their plan. After the lecture, Q&A session, discussion and presentation session will be held for deepening your understanding.

---

Lesson 11-12: MDGs and SDGs

(Lecture, 90 min. /  
Exercise, 90 min.)

---

The basic information of MDGs and SDGs such as ideas, components and areas will be introduced. Students can also learn the difference between the 2 development goals, and interconnection.

Students are asked to choose 1 goal from the SDGs and pick up 1 target. Then try to make a development plan along with PCM Method.

---

Lesson 13-14: Review on PCM and Workshop

(Lecture, 60 min. /  
Exercise, 120 min.)

---

The important tips on the PCM method when planning the social development project will be reviewed. After the lecture, final group work will be conducted to complete the social development project plan.

---

Lesson 15: Final Presentation, Summary of the Course

(Presentation, 80 min. /  
Discussion, 10 min.)

---

Each group will give their final presentation which explains their social development project plan. The Q&A and the exchange of their opinions and comments sessions will follow the presentation. After these sessions, discussion by all students is conducted in order to recognize the result of this course. Any kind of comments are also welcome for future improvement of this course.

---

**1. Course Code**

2288

**2. Course Title**

International Development Cooperation

**3. Teacher**

Maruf BAIG

**4. Term and Schedule**

F1 Mon 1~2

**5. Course Overview and Objectives**

The entire focus of the lecture will be to equip the students with the information covering the ground realities of International cooperation to the extent possible. Initially starting with the broad overview of the international development perspectives gradually the focus will be more articulated to JICA, United Nations/ Third sector led development aspects and will be concluded with Project Management Tools and techniques.

**6. Course Goals (Attainment Targets)**

- (1) Students get exposed to on the ground practices of development cooperation
- (2) Students get insights of Not For Profit Vs For profit interventions
- (3) Students consider cultural aspects in developing projects/programs
- (4)
- (5)
- (6)

**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)	
	Specialized knowledge and literacy		
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	(3)
	Ability to think through	(3)	
	Ability to work in a team	(3)	
Professional ethics			

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

None

**9. Textbooks (Books required to have to take this course)**

Pre-selected readings.

**10. Reference Books (optional books for further study)**

A list of supplementary readings will be provided one week before the respective session

## 11. Evaluation

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

## 12. Notes

1. Students may be requested to read supplementary materials before the class.
2. On top of JICA library, students might need to access open sources.
3. Electronic version of reading materials will be shared one week before the session.
4. Evaluation will be made entirely on the group presentation. Further instruction will be provided in due course.

## 13. Course plan

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

---

Lesson 1: An overview on development cooperation and career prospects (Lecture 90 mins)

---

Literature review: Theories of Development Cooperation

Brief on development partners JICA, USAID, UN, GEF, DFID, World Bank, DFAT (Australia), CIDA etc.

Creation of new World Bank i.e. Asian Infrastructure Investment Bank  
South-South Cooperation

---

Lesson 2: NGOs as an actor to development cooperation (Lecture 30 mins, Discussion with Online)

---

Third Sector Led Development

History of NGO led social development

NGOs as a supplement to local Governments development mandate

---

Lesson 3: Japan as a development partner an overview (Lecture 90 mins)

---

Summary on Japan's Official Development Assistance

JICA as a development partner

Overview of JICA projects, JOCV and Research credentials

---

Lesson 4: Turning challenges to opportunities: TICAD (Lecture 30 mins, Discussion with Online)

---

Overview on TICAD

Challenges faced by Japanese companies regarding doing business in Africa

\*Online Session with resource persons: UNDP/ BRAC/ Grameen Bank/ ICT4D professionals

Innovators from Africa/else

---



---

Lesson 5: UN led development assistance an Overview (Lecture 60 mins,  
Discussion with Online)

---

Overview on UN led development assistance  
MDGs and SDGs  
UNREDD program and the prospect of ICT

---

Lesson 6: The Inclusion Perspective: Social Business Vs Business (Lecture 45 mins,  
Discussion with Online)

---

The inclusion perspective: Social Business Vs Business.  
A case study on Grameen Danone Foods Ltd.  
\*Online Session with resource persons: BRAC/ Grameen Bank/ ICT4D professionals Innovators from Africa/else

---

Lesson 7: Theoretical aspects of project cycle management (Lecture 90 mins)

---

Transition of ICT4D  
Project Cycle Management  
Overview on project monitoring (SMART indicators), project evaluation  
A sample project evaluation funded by Global Environmental Facility (GEF)

---

Lesson 8: The Power Dynamics of social development projects (Lecture 45 mins,  
Discussion with Online)

---

Project Stakeholder Analysis and the power dynamics  
\*Online Session with resource persons: UNDP/ BRAC/ Grameen Bank/ ICT4D professionals Innovators from Africa/else

---

Lesson 9 : Project Planning and Management Tools (Lecture 90 mins)

---

Structured Flexibility between Process Planning and Blue Print Planning  
Formulation of project Logframe

---

Lesson 10 : The people aspect of social development projects (Lecture 45 mins,  
Discussion with Online)

---

What is People Centered Development Projects  
Cultural aspects in Project Management and factors affecting project success/failures  
\*Online Session with resource persons: UNDP/ BRAC/ Grameen Bank/ ICT4D professionals Innovators from Africa/else

---

---

Lesson 11 : How to draft a project proposal and subsequent considerations

---

(Lecture 90 mins)

Aspects to consider while formulating a Project Proposal

Online Session with resource persons: UNDP/ BRAC/ Grameen Bank/ ICT4D professionals  
Innovators from Africa/else

---

Lesson 12-15 : \*\*Group Presentation (Topic to be discussed)

---

\* Subject to confirmation/availability

\*\* Subject to the number of Groups. Each group will be allocated 20-25 mins

---

**1. Course Code**

2291

**2. Course Title**

Data Structures and Object Oriented Programming (Java)

**3. Teacher**

Muhammad WANNOUS, Ph.D.

**4. Term and Schedule**

F3 Fri 1~2

**5. Course Overview and Objectives**

This course introduces the students to the Object Oriented (OO) Paradigm in general and to the data structures used in it. It is NOT intended as an introduction to programming. The course utilizes the popular programming language Java to introduce the concepts of programming in OO and the implementations of different data structures in it such as the arrays, lists, queues and trees. The course serves as a base for any developer who intends to use Java in developing web, mobile, and desktop applications.

**6. Course Goals (Attainment Targets)**

- (1) Recognize the features of Object Oriented programming
- (2) Describe the features of data structures implemented in OO language
- (3) Experiment with the development tools and the use of OO language and data structures
- (4) Compare the different data structures in terms of memory usage and complexity
- (5) Use Java language and the data structures in developing a simple application.
- (6)

**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)	
	Specialized knowledge and literacy	(3) (5)	
Human skill (Tankyu skill)	Ability to continually improve own strengths	(3) (4) (5)	
	Ability to discover and resolve the problem in society	Problem setting	(4) (5)
		Hypothesis planning	
		Hypothesis testing	
	Fundamental	Practice	(4) (5)
	Competencies for Working Persons	Ability to step forward	(5)
Ability to think through		(3) (4)	
	Ability to work in a team	(3) (4)	
Professional ethics		(1)	

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

The following courses are required to be completed.

- [1] Fundamentals of Computer Programming (2209)

**9. Textbooks (Books required to have to take this course)**

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

**10. Reference Books (optional books for further study)**

- [1] Core Java Volume I--Fundamentals, ISBN-13: 978-0134177304  
 [2] Data Structures and Algorithms in Java, ISBN-13: 978-0672324536

## 11. Evaluation

Goals	Evaluation method & point allocation					
	examination	Quiz	Reports	Presentation	Deliverables	Other
(1)		○				
(2)		○				
(3)					○	
(4)					○	
(5)					○	
(6)						
Allocation		40			60	

## 12. Notes

This course contains both theoretical and practical parts. Be prepared for using the shell interface and for coding (in Java).

Quizzes and projects 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, Definition and characteristics of Object Oriented paradigm) (Discussion, Lecture 45 minutes, Practice 45)

---

- [1] Course syllabus
- [2] Grading
- [3] How we develop and run applications.
- [4] Development environment
  - + Java Development Kit (JDK)
  - + NetBeans IDE
  - + Text editor

---

Lesson 2: (First Java application, variables and types in Java) (Practice, 90 minutes)

---

- [1] Our first Java application
  - + Writing the code of the application
  - + Compiling the application from the command-line
  - + Running the application
- [2] Variables and types in Java
  - + Types of variables in Java
  - + Declaring, assigning values to, and reading values of variables
  - + Arrays
  - + Variable scope

---

Lesson 3: (Methods, parameters, arguments, operators, and expressions) (Practice, 90 minutes)

---

- [1] Methods
    - + Invoking methods
    - + Passing parameters
  - [2] Command-line arguments
  - [3] Operators and expressions.
-

Lesson 4: (Flow control statements, complex types (Classes))

(Lecture 30 minutes,  
Practice 60 minutes)

---

- [1] Conditional statements
    - + if-else if-else
    - + switch
  - [2] Loops
    - + for
    - + while
  - [3] break and continue
  - [4] Complex types (Classes)
    - + Access modifiers
    - + Packages.
- 

Lesson 5: (Objects-1-)

(Lecture 30 minutes,  
Practice 60 minutes)

---

- [1] Instantiating objects from classes.
  - [2] Using objects.
    - + Accessing fields
    - + Invoking methods
  - [3] Static variables and methods.
- 

Lesson 6: (Objects-2-)

(Lecture 30 minutes,  
Practice 60 minutes)

---

- [1] Constructors
  - [2] Method overloading
  - [3] Inheritance
    - + Private fields in the parent class
    - + Method overriding (Polymorphism)
- 

Lesson 7: (Exceptions)

(Lecture 30 minutes,  
Practice 60 minutes)

---

- [1] Exceptions
    - + Checked exception
    - + Runtime exception
- 

Lesson 8: (I/O)

(Lecture 30 minutes,  
Practice 60 minutes)

---

- [1] Standard I/O
    - + Standard-in
    - + Standard-out
    - + Standard-err
  - [2] File I/O
-

---

Lesson 9 : (Application Project-1-)

(Practice, 90 minutes)

---

In this session, we are going to write a simple application to manage the courses.

- 1- Command-line interface
- 2- User actions: add a new course, list courses, search courses, modify a course, delete a course, save courses to a file, and load courses from a file.
- 3- Accepts a file name that includes a list of courses.
- 4- The course attributes are: ID (text 'dd-d-d'), name (text without special characters), term (F1~3-S1~3), day (Mon~Fri), time slot (1-6), and instructor's name (text without special characters).
- 5- Two courses can't have the same ID.
- 6- Uses arrays to save the courses

---

Lesson 10 : (Application Project-1- continued)

(Practice, 90 minutes)

---

Continue developing the course management application.

---

Lesson 11 : (Data structures -1-)

(Lecture 30 minutes,  
Practice 60 minutes)

- 
- [1] One-dimension arrays
  - [2] Lists
    - + Array list
    - + Linked list

---

Lesson 12 : (Data structures -2-)

(Lecture 30 minutes,  
Practice 60 minutes)

- 
- [1] Stack
  - [2] Queue

---

Lesson 13 : (Data structures -3-)

(Lecture 90 minutes)

- 
- [1] Trees
    - + Binary tree
    - + Binary search tree

---

Lesson 14 : (Application Project-2-)

(Practice, 90 minutes)

---

In this session we write an application that uses the binary search tree structure to search for a specific course in the set of courses we have.

- 1- Binary search tree class
- 2- Read the course information from a file
- 3- Search records

---

Lesson 15: (Wrap up)

(Discussion 90 minutes)

- 
- [1] Discuss and review the topics covered in this course.
  - [2] Suggestions of improvements.
-

**1. Course Code**

2293

**2. Course Title**

Software Development Special Experiments

**3. Teacher**

Muhammad WANNOUS, Ph.D.

**4. Term and Schedule**

F1 Mon &amp; Thu 1~2

**5. Course Overview and Objectives**

This course is problem-driven. It introduces a whole project that contains a number of close-to-real-world functions to develop. It is intended to demonstrate the methods and technologies that could be applied to arrive at a proper solution. Students will be able to use the experiences/skills they have acquired especially those related to programming, web-technologies, and Cloud Computing environment.

**6. Course Goals (Attainment Targets)**

- (1) Examine a document provided by a virtual customer to develop an application.
- (2) Formulate a number of requirements in a document
- (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 modules 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	(2) (3) (4)	
	Ability to discover and resolve the problem in society	Problem setting	(1) (4)
		Hypothesis planning	
		Hypothesis testing	
		Practice	(2) (3) (5) (6)
	Fundamental Competencies for Working Persons	Ability to step forward	(1) (2) (3) (4)
	Ability to think through		
	Ability to work in a team	(1) (2) (3) (4)	
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)(2245)

**9. Textbooks (Books required to have to take 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		40			60	

## 12. Notes

This course mainly contains practical parts. Be prepared for using Integrated Development Environment and for coding (in Java).

Quizzes and projects 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, WeBill Project) (Discussion and Lecture  
45 minutes,

---

- [1] Course syllabus
  - [2] Grading
  - [3] The course project (WeBill)
    - + Description document
- 

Lesson 2: (Entity Relation Diagram) (Discussion & Groupwork  
90 minutes)

---

- [1] Identify sub-systems/entities
  - [2] Generating the Entity Relation Diagram (ERD)
- 

Lessons 3-4: (Initial design and requirements) (Discussion & Groupwork  
180 minutes)

---

- [1] The main functions of the solution system
  - [2] An initial design for the solution system
    - + Main modules
    - + Interconnections
  - [3] The functional requirements
    - + The Requirements Document (RD)
- 

Lesson 5-6: (Development Environment) (Practice 180 minutes)

---

- [1] Java Development Kit (JDK)
  - [2] Android Studio
  - [3] Google Cloud SDK
  - [4] Google App Engine Java SDK
  - [5] NetBeans IDE
  - [6] Tomcat Apache Server
  - [7] MySQL server
-



---

Lesson 7-8: (Initial design - Log in/out)

(Groupwork 90 minutes,  
Practice 90 minutes)

---

- [1] Initial design document
  - [2] User verification sub
    - + Login page (HTML. JavaScript)
    - + Database (users' and user's tables)
    - + Validation Servlet
    - + Response page
    - + Logout Servlet
  - [3] Deployment
- 

Lesson 9-10: (Initial design - File uploading)

(Practice 180 minutes)

---

- [1] File upload page (HTML, JavaScript)
    - + Upload Servlet
      - \* Storing the file
      - \* Updating the user's table in the database
  - [2] Deployment
- 

Lesson 11-12: (initial design - Location information)

(Practice 180 minutes)

---

- [1] File verification page (HTML, JavaScript)
  - [2] Location reader Servlet
    - + Obtain the location information from the file uploaded
  - [3] Deployment
- 

Lesson 13-14: (Initial design - QR-Code information)

(Practice 180 minutes)

---

- [1] QR-Code reader Servlet
    - + Detect and decode the QR-Code in the file uploaded
  - [2] Deployment
- 

Lesson 15-16 : (Initial design - OCR)

(Practice 180 minutes)

---

- [1] Testing OCR individually
  - [2] OCR Servlet
    - + Detect the characters in the file uploaded
    - + User input if necessary (HTML/JavaScript)
  - [3] Deployment
- 

Lesson 17-18 : (Combining modules, review)

(Practice 120 minutes,  
Discussion 60 minutes)

---

- [1] Combine all the modules in one application
  - [2] Deploy the complete application
  - [3] Testing the application
  - [4] Course review
-

---

Lesson 19-22 : (Enhancements to the initial design)

(Groupwork 360 minutes)

---

Starting from this session, the students will be divided into groups to work on selected number of additional features in the application.

Each group will select a set of features to add to the application.

1- Add two new columns to the Users' table, one column for the longitude of the electricity meter and the other one for the latitude. Save sample values in the new columns.

2- Modify location detection module to obtain the GPS information of the uploaded image and compare it with the one in the Users' table.

3- Add a new page to list the files uploaded by one user.

4- Add a thumbnail to the file record in the page that lists the file.

5- Add a page and Servlet to modify the user's information.

6- Provide the admin with a page to verify the reading obtained from the file uploaded or from the user input.

7- Add a page to allow the admin to set the different charges and generate bills.

8- Add a function that notifies the admin of new file uploads.

---

Lesson 23-26 : (Mobile application -Login)

(Practice 360 minutes)

---

[1] Log in screen

[2] Passing information to intity

[3] Creating new activity

[4] Connecting to the web application

[5] Taking a photo and uploading it to the application.

[6] Adding new activities for the different functions available in the web interface.

---

Lesson 27-29 : (Testing the application)

(Practice 270 minutes)

---

[1] Planning test procedure

+ Number of users

+ Test scenario

[2] Carrying the test procedure

[3] Checking weak points in the application

[4] Correcting errors

---

Lesson 30 : (Wrap up)

(Discussion, 90 minutes)

---

[1] Discuss and review the topics covered in this course.

[2] Suggestions of improvements.

---

**1. Course Code**

2294

**2. Course Title**

Information System Architectures

**3. Teacher**

Teruhiko Hiraishi

**4. Term and Schedule**

F2 Fri 1~2

**5. Course Overview 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.

**6. Course 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.
- (5)
- (6)

**7. Correspondence relationship between Educational goals and Course goals**

Educational goals of the school		Course Goals	
High level ICT skills	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),(3)
		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			

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

None.

**9. Textbooks (Books required to have to take this course)**

None.

**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	40		20	40		

## 12. Notes

This course is intended not only to learn the theoretical concept but also by thinking themselves, by acting, and by experiencing, acquiring the practical skills. So through the team discussions and project management, this course intends to improve not only the students' practical ability, but also facilitation, negotiation, and presentation abilities.

## 13. Course plan

This plan is tentative and might be changed at the time of delivering the course.

---

Lesson 1: Orientation (lecture & practice, 90 min.)

---

Comprehend the outline of the course.

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

---

Lesson 2: Outline of requirements development (lecture & practice, 90 min.)

---

Comprehend the requirements development

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

---

Lesson 3: Outline of RFP (lecture & practice, 90 min.)

---

Read the case study, and comprehend RFP (Request for Proposal)

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

---

Lesson 4: Structuring stakeholders (lecture & practice, 90 min.)

---

Read the case study, and structure stakeholders.

- (1) Structuring stakeholders

---

Lesson 5: Issues & purpose (lecture & practice, 90 min.)

---

Identify the essential issues and the purpose of the system through the case study

- (1) Extract the issues of the organization
  - (2) Extract the purpose of the system
-

---

Lesson 6-7: Requirement organization (lecture & practice , 90 min.)

---

Using the stakeholder list, develop requirement organization sheet, which will be the basis of the requirement definition document.

(1) Requirement organization

---

Lesson 8: Developing requirement definition document (lecture & practice , 90 min.)

---

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

(1) Develop requirements definition document

---

Lesson 9: Recent topics on requirement development (lecture & practice , 90 min.)

---

Introduce recent topics on requirement development, and introduce the concept of the model.

- (1)Recent topics on requirement development
- (2)Concept of Model.
- (3)Functional block diagram

---

Lesson 10: Designing architectures (lecture & practice , 90 min.)

---

Understand the base of the models. Especially the functional block diagrams, and use case diagram.

- (1) Functional block diagram(continued)?
- (2) Use case diagram.

---

Lesson 11 - 14: Developing system architecture (lecture & practice , 4\*90 min.)

---

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

- (1) Use case diagram
- (2) Activity diagram
- (3) Class diagram
- (4) State machine diagram
- (5) Data flow diagram

---

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

---

Make presentation for the developed system architecture.

- (1) Review of the requirement definition document.
- (2) Difficulty and measures

---

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

---

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

---

**1. Course Code**

2295

**2. Course Title**

System Architecture Special Experiments

**3. Teacher**

Teruhiko Hiraishi

**4. Term and Schedule**

F3 Mon &amp; Thu 1~2

**5. Course Overview and Objectives**

Acquire the practical ability of the knowledge and technique on "Information System Architectures" by practicing through playing rolls of acquirer and supplier.

Each member belongs to a team, and the team will play rolls acquirer and supplier in the class.

**6. Course Goals (Attainment Targets)**

- (1) To be able to determine the theme of the requirements as an acquirer.
- (2) To be able to develop RFP(Request for Proposal) as an acquirer.
- (3) To be able to develop the requirement definition documents as a supplier.
- (4) To be able to the system architecture documents as a supplier.
- (5)
- (6)

**7. Correspondence relationship between Educational goals and Course goals**

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

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

Information System Architectures (achievement of attainment targets is required)

**9. Textbooks (Books required to have to take this course)**

None.

**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			30	30	40	

## 12. Notes

This course is intended to acquire practical ability by playing both acquirer and supplier roles as project teams. So through the team discussions and project management, this course intends to improve not only the students' practical ability, but also facilitation, negotiation, and presentation abilities.

## 13. Course plan

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

---

Lesson 1: Orientation (lecture & practice , 90 min.)

---

Comprehend the outline of the course.

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

---

Lesson 2~3: Determining the themes (lecture & practice, 2\*90 min.)

---

As an acquirer, determine theme to order to the supplier, referring to the sample case study

- (1) Read case study
- (2) Read RFP
- (3) Establish issue to be solved
- (4) Logical thinking
- (5) Practice (Acquirer & Supplier)
- (6) Presentation

---

Lesson 4~5: Requirement analysis(1) (lecture & practice, 2\*90 min.)

---

As a supplier, analyze stakeholders, and identify the issues, and purpose of the system

- (1) Outline of Requirement definition
  - (2) Stakeholder analysis
  - (3) Identify the issue and purpose of the system
  - (4) Practice (Acquirer & Supplier)
  - (5) Presentation
-

Lesson 6~7: Requirement analysis (2)

(lecture & practice, 2\*90 min.)

---

As a supplier, develop requirement organization, then develop requirement definition.

- (1) Requirement organization
- (2) Requirement definition
- (3) Facilitation and negotiation
- (4) Practice (Acquirer & Supplier)
- (5) Presentation

---

Lesson 8~9: Architecture design (1)

(lecture & practice, 2\*90 min.)

---

According to the RFP from acquirer, develop architecture documents as a supplier.

- (1) Architecture design
- (2) Concept of the model
- (3) Functional block diagram
- (4) Use case diagram
- (5) Practice (Acquirer & Supplier)
- (6) Presentation

---

Lesson 10~11: Architecture design (2)

(lecture & practice, 2\*90 min.)

---

According to the RFP from acquirer, develop architecture documents as a supplier.

- (1) Activity diagram
- (2) Class diagram
- (3) Practice (Acquirer & Supplier)
- (4) Presentation

---

Lesson 12~13: Architecture design (3)

(lecture & practice, 2\*90 min.)

---

According to the RFP from acquirer, develop architecture documents as a supplier.

- (1) State machine diagram
- (2) Data flow diagram
- (3) Practice (Acquirer & Supplier)
- (4) Presentation

---

Lesson 14: Make development plan

(lecture & practice, 90 min.)

---

At the end of the lecture, all the teams plan for future exercise activities.

- (1) Review of the requirement definition document.
  - (2) Make development plan
  - (3) Practice (Acquirer & Supplier)
  - (4) Presentation
-



---

Lesson 15~29: Practice

(practice, 15\*90 min.)

---

Each team plays the role of acquirer and supplier based on their plans for requirement analysis and system architecture design.

- (1) Supplier develop requirement analysis deliverables based on the acquirer's RFP.
- (2) Supplier report the progress status to the acquirer.
- (3) Acquirer responds to the questions from the supplier, if needed.
- (4) Presentation

---

Lesson 30: Discussion on the Requirement analysis and System architecture

(lecture & practice, 90 min.)

---

Discuss about the difficulty and measures on requirement analysis and system architecture.

- (1) Discuss about difficulty and measures.
  - (2) Final report.
-

**1. Course Code**

2298

**2. Course Title**

Social Research and Data Analysis

**3. Teacher**

Chika Yoshida

**4. Term and Schedule**

S2 Wed 1~2

**5. Course Overview and Objectives**

The main purpose of this course is to introduce students to quantitative and qualitative methods for conducting meaningful inquiry and research. They will gain an overview of research intent and design, methodology and technique, format and presentation, and data management and analysis informed by commonly used statistical methods. The course will develop each student's ability to evaluate the situation more logically for proceeding their theme study effectively and efficiently. The course will provide an overview of the important concepts of research design, data collection, statistical and interpretative analysis, and final report presentation. The focus of this course is not on mastery of statistics but on capturing the capability to perform their Theme study.

**6. Course Goals (Attainment Targets)**

- (1) Understand the process of theme study and the role of research and data analysis.
- (2) Understand the purpose and meaning of qualitative analysis, quantitative analysis and use properly
- (3) Develop a research problem, related questions and the hypothesis
- (4) Collect accurate data addressed research problem from the questionnaires
- (5) Understand the method to analyses the data by "Excel"(Correlation coefficient) and "R" (t-test, Regression etc.)
- (6) Validate Analyzed data

**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)	
	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	(3)
		Hypothesis planning	(3)
		Hypothesis testing	(3)
		Practice	(3)
	Fundamental Competencies for Working Persons	Ability to step forward	(3),(4),(5),(6)
Ability to think through		(3),(4),(5),(6)	
	Ability to work in a team	(3),(4),(5),(6)	
Professional ethics		(2)	

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

Students are required to have basic Excel operation skill.

**9. Textbooks (Books required to have to take this course)**

None

## 10. Reference Books (optional books for further study)

Ritchie and Lewis, Qualitative Research Practice, SAGE Publications ISBN 0-7819-7110-8

Barry Render, Ralph M. Stair, JR and Mitchalel E. Hanna, Quantitative analysis for management 9e,

Person Practice Hall ISBN0 12 185702 0

## 11. Evaluation

Goals	Evaluation method & point allocation					
	examination	Quiz	Reports	Presentation	Deliverables	Other
(1)				○		
(2)				○		
(3)				○		
(4)			○			
(5)			○			
(6)				○		
Allocation			60	40		

## 12. Notes

## 13. Course plan

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

---

Lesson 1-2: Course Orientation and Research Design Process (Lecture, 90min. Exercise, 90 min.)

---

Explanation of Course logistics and Research Process

- Course Orientation.
- Steps in the Process of Research
- Identifying specifying a purpose, creating research questions, hypothesis and/or research problem,
- Reviewing literature
- Ethics of research and informed consent
- Individual Exercise (1) Identifying Research Questions and Creating Hypotheses.

---

Lesson 3-4: Introductory of Qualitative Research (Lecture, 90min. Exercise, 90 min.)

---

To learn about Qualitative Research

- Selecting samples and design perspective (Biography, Phenomenology, Ethnography etc.)
- Collection Techniques (Interview, Observation, Documentation etc.)
- Interpreting Qualitative Data
- Qualitative Data Analysis Procedures
- Coding
- Thematic development
- Group Exercise (1) Design Qualitative Research

---

Lesson 5-6: Introduction to Quantitative Research

(Lecture, 90min. Exercise,  
90 min.)

---

To learn about Quantitative Research

- What is a Quantitative Data
  - Collection and Analysis Techniques
  - Sampling Concepts
  - Defining the Target Population and Representative Sample
  - Category (Sub group)/ Weighting / Likert scale
  - Sampling Methods (Cluster, Stratified, Simple Random)
  - Group Exercise (2) Design Questionnaires
- 

Lesson 7-8: Research Design Presentation

(Lecture, 90min.  
Presentation, 90 min.)

---

To learn how to make effective Data Collection Guide and Questionnaires as research design through the Group work and the presentation.

- Group Presentation of Research Design
  - Selecting winners
  - Implementation of Questionnaire
- 

Lesson 9-10: Basic Statistics by Excel

(Lecture, 90min. Exercise,  
90 min.)

---

To learn how to illustrate and interpret the matrix, graphs of statistics and correlation chart by Excel.

- Summarizing and describing a collection of data
  - Mean, mode and standard deviation
  - Histograms and Pie chart with percentages and Ratio
  - Identifying randomness and uncertainty in data
  - Correlation coefficient and the Matrix.
  - Interpretation of correlation coefficient.
  - Individual Exercise (2) Correlation coefficient Matrix and Interpretation
- 

Lesson 11-12: Introduction of Data analysis by "R" (1)

(Lecture, 90min. Exercise,  
90 min.)

---

To learn how to install "R" and get basic operation by "R"

- Installing R
  - Simple calculation and statistical analysis in R console
  - Read data file in R editor
  - Descriptive statistics (histogram, scatter diagram, etc.)
  - Individual Exercise (3) Histogram and Scatter Diagram from data file.
-

---

Lesson 13-14: Introduction of Data Analysis by "R" (2)

(Lecture, 90min. Exercise,  
90 min.)

---

To learn how to get and interrupt t-test data, distribution chart and Regression by "R"

- Correlation coefficient test
- Kendall's rank correlation
- T test
- Individual Exercise (4) t-test, Correlation coefficient and Rank Correlation output

---

Lesson 15-16: Final presentation and Summary

(Lecture, 30min.  
Presentation, 90 min.)

---

To confirm understanding and assessment

- Group Presentation of Data Analysis by Research Data with interpretation of the results.
  - Course Summary
-

**1. Course Code****2. Course Title**

Basic Business Japanese

**3. Teacher**

Seiko Kondo

**4. Term and Schedule**

S1,S2 (15 classes) Tue 4~5(120 min)

**5. Course Overview and Objectives**

This course will help your study of preparation for \*JLPT N5 which will be held in July 2018. You will study practical exercises focusing Japanese grammar at the level of N5.

\*JLPT = Japanese language Proficiency Test

After the exam of JLPT in July, You will challenge to make some oral presentations in Japanese.

**6. Course Goals (Attainment Targets)**

- You will be able to review and make sure the basic Japanese grammar. (You have to study letters and vocabulary by yourself.)
- (1) letters and vocabulary by yourself.)
  - (2) You will be able to be familiar with the style of JLPT exam.
  - (3)
  - (4)
  - (5)
  - (6)

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

In order to take the exam of JLPT N5, it is necessary to know 100 Kanji and Hiragana/Katakana very well. You must be able to read Hiragana and Katakana perfectly. This will be required a lot of effort in your self-study. This course will be big help for you.

**8. Textbooks (Books required to have to take this course)**

You will be informed before the course starts.

**9. Reference Books (optional books for further study)****10. Requirements for Successful Completion**

In order to get "pass" grade, you should have a high rate of attendance (at least 80%).

**11. Notes****12. Course plan**

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

Lesson 1-15

exercises 120min \* 15

Practical exercises focusing Japanese grammar at the level of JLPT N5.

After the exam of JLPT in July, You will challenge to make some oral presentations in Japanese.

**1. Course Code****2. Course Title**

Business and Academic writing in practice

**3. Teacher**

Maruf BAIG

**4. Term and Schedule**

F1 Mon 3-4

**5. Course Overview and Objectives**

This course will enlighten students with on the ground standards in academic and business writings. Students will be categorically engaged to class room activities from day one starting with a compilation of their intentions in considering this non-credit course. There will be more focus on participation instead of course work etc. Students will be exposed to see their work from the audience lens and in doing so attributes like clarity, referencing, relevancy, basic grammar etc. will also be covered.

**6. Course Goals (Attainment Targets)**

- (1) To familiarize students with academic writings standards i.e. referencing, structuring etc.
- (2) settings
- (3) To expose them with the edges to cope with the post study communication and
- (4)
- (5)
- (6)

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

None

**8. Textbooks (Books required to have to take this course)**

None

**9. Reference Books (optional books for further study)**

Reference material will be announced in the class

**10. Requirements for Successful Completion**

To be announced in the class

**11. Notes**

None

## 12. Course plan

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

---

Lesson 1-2: Business and Academic Writing: Students Vs Audience perspectives Lecture, 3 hrs

---

- Open discussion over the students' expectations from the course
- Expectations of the target audiences i.e. looking at the work from others lenses
- Relevant group/individual activities

---

Lesson 3-4: Creative writing Lecture, 3 hrs

---

- Writing activities over selected/open ended topics and shared/group discussion over further improvement
- Relevant group/individual activities

---

Lesson 5-6: Report Vs Thesis structure Lecture, 3 hrs

---

- Discussion over the commonalities and differences with examples of best practices
- Relevant group/individual activities

---

Lesson 7-8: Referencing for academic writing Lecture, 3 hrs

---

- A standard referencing guideline will be provided along with activities for citing etc.
- Relevant group/individual activities

---

Lesson 9-10: Proof reading Lecture, 3 hrs

---

- Tools of proof reading, ways and means to be a better proof reader
- Relevant group/individual activities

---

Lesson 11-12: Common Grammar drills Lecture, 3 hrs

---

- Group activities over commonly mistaken
- Relevant group/individual activities

---

Lesson 13-14: Common Grammar drills Lecture, 3 hrs

---

- Group activities over commonly mistaken
- Relevant group/individual activities

---

Lesson 15: Business Communication at a glance Lecture, 1.5 hrs

---

- DO's and DONT's of presentations, correspondence
  - Relevant group/individual activities
-



**1. Course Code****2. Course Title**

Elementary Business Japanese 1

**3. Teacher**

Seiko Kondo

**4. Term and Schedule**

F1,F2,F3 (20 classes) Tue 3

**5. Course Overview and Objectives**

This course will help your study of preparation for \*JLPT N4 -N3 which will be held in Desember 2017. You will study practical exercises focusing Japanese grammar at the level of N4 -N3.

\*JLPT = Japanese language Proficiency Test

After the exam of JLPT in December, You will continue studying for higher level of JLPT.

**6. Course Goals (Attainment Targets)**

- (1) You will be able to understand basic Japanese used in everyday situations to a certain
- (2)
- (3)
- (4)
- (5)
- (6)

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

-You should be able to understand typical expressions and sentences written in hiragana, katakana, and basic kanji.

-You should be able to listen and comprehend conversations about topics regularly encountered in daily life and classroom situations, and be able to pick up necessary information from short conversations spoken slowly.

**8. Textbooks (Books required to have to take this course)**

You will be informed before the course starts.

**9. Reference Books (optional books for further study)****10. Requirements for Successful Completion**

In order to get "pass" grade, you should have a high rate of attendance (at least 80%).

**11. Notes****12. Course plan**

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

---

Lesson 1-15

exercises 90min \* 15

---

Practical exercises focusing Japanese grammar at the level of JLPT N4 -N3.

After the exam of JLPT in December, You will continue studying for higher level of JLPT.

**1. Course Code****2. Course Title**

Elementary Business Japanese 2

**3. Teacher**

Seiko Kondo

**4. Term and Schedule**

S1,S2 (15 classes) Tue 3

**5. Course Overview and Objectives**

This course will help your study of preparation for \*JLPT N3 which will be held in July 2018. You will study practical exercises focusing Japanese grammar at the level of N3.

\*JLPT = Japanese language Proficiency Test

If you want to try to exam of N2, you can get help for it.

After the exam of JLPT in July, You will enjoy free conversation in Japanese.

**6. Course Goals (Attainment Targets)**

You will be able to to understand Japanese used in everyday situations, and in a variety of

- (1) circumstances to a certain degree. (You have to study letters and vocabulary by yourself.)
- (2)
- (3)
- (4)
- (5)
- (6)

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

You must know basic Japanese.

- You should be able to read and understand passages on familiar daily topics written in basic vocabulary and kanji.

**8. Textbooks (Books required to have to take this course)**

You will be informed before the course starts.

**9. Reference Books (optional books for further study)****10. Requirements for Successful Completion**

In order to get "pass" grade, you should have a high rate of attendance (at least 80%).

**11. Notes****12. Course plan**

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

---

Lesson 1-20

exercises 90min \* 20

---

Practical exercises focusing Japanese grammar at the level of JLPT N3 (and N2 if you want to try)  
After the exam of JLPT in July, You will enjoy free conversation in Japanese.

**1. Course Code**

単位無

**2. Course Title**

Intermediate Business Japanese 1

**3. Teacher**

Kaori Yamashita

**4. Term and Schedule**

F1,F2,F3 (20 classes) Sat 3~4(120 min)

**5. Course Overview and Objectives**

This course is for those who have finished the beginners' level and wish to get ready for the intermediate level, also for those who are aiming to pass N3 of the Japanese-Language Proficiency Test (JLPT). In addition, this course is designed for those who would like to develop business Japanese for internships, such as conversational phrases and honorific expressions that actually occur in business situations.

**6. Course Goals (Attainment Targets)**

- (1) To understand vocabulary and kanji required for the JLPT N3
- (2) To understand useful sentence patterns, and to be able to improve grammatical competence
- (3) To be able to get the general idea of more complicated materials, and the general idea of conversations spoken at near-native speed about daily topics
- (4) To demonstrate basic Japanese social protocol and business etiquette with honorific
- (5)
- (6)

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

M2 students who complete "Japanese in business situations" of the spring term, or M1/M2

**8. Textbooks (Books required to have to take this course)**

None

**9. Reference Books (optional books for further study)**

"Nihongo So-Matome N4/N3" ASK Publishing

**10. Requirements for Successful Completion**

Students who attend at least 13 of the 15 sessions and score more than 60 points on the final exam in this course will receive "pass" grade.

**11. Notes**

Please note that some Japanese language skill is preferable for your successful internship

**12. Course plan**

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

Lesson 1-4: N4 review	(lecture, 120min*4)
<ul style="list-style-type: none"> <li>▪ N4 practice test / review of vocabulary, kanji and grammar</li> </ul>	
Lesson 5-19: Intermediate Japanese	(lecture, 120min*15)
<ul style="list-style-type: none"> <li>▪ N3 practice: vocabulary, kanji and grammar</li> </ul>	
Lesson 20: Evaluation and confirmation of understanding	(lecture, 120min)
<ul style="list-style-type: none"> <li>▪ Writing exam</li> </ul>	

**1. Course Code**

単位無

**2. Course Title**

Intermediate Business Japanese 2

**3. Teacher**

Kaori Yamashita

**4. Term and Schedule**

S1,S2 (15 classes) Sat 3~4(120 min)

**5. Course Overview and Objectives**

This course is for those who have mastered the basics and have started studying the intermediate Japanese, also for those who are aiming to pass N3 of the Japanese-Language Proficiency Test (JLPT). In addition, this course is designed for those who would like to develop business Japanese for internships, such as conversational phrases and honorific expressions that actually occur in business situations.

**6. Course Goals (Attainment Targets)**

- (1) To understand vocabulary and kanji required for the JLPT N3
- (2) To understand useful sentence patterns in daily life, and to be able to improve grammatical competence
- (3) To be able to get the general idea of more complicated materials, and the general idea of conversations spoken at near-native speed about daily topics
- (4) To demonstrate basic Japanese social protocol and business etiquette with honorific
- (5)
- (6)

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

M1/M2 students who complete "Intermediate Business Japanese 1" of the fall term, or students who have Japanese language proficiency equivalent to top level of N4 in the JLPT.

**8. Textbooks (Books required to have to take this course)**

None

**9. Reference Books (optional books for further study)**

"Nihongo So-Matome N3" ASK Publishing

**10. Requirements for Successful Completion**

Students who attend at least 80% of the sessions and score more than 60 points on the final exam in this course will receive "pass" grade.

**11. Notes**

Please note that some Japanese language skill is preferable for your successful internship

**12. Course plan**

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

Lesson 1: measure the achievement of N3	(lecture, 120min)
---	-------------------

<ul style="list-style-type: none"> <li>• N3 practice test</li> </ul>	
--	--

Lesson 2-14: Intermediate Japanese	(lecture, 120min*13)
------------------------------------	----------------------

<ul style="list-style-type: none"> <li>• N3 practice: grammar, reading and listening comprehension, practice tests</li> </ul>	
---	--

Lesson 15: Evaluation and confirmation of understanding	(lecture, 120min)
---	-------------------

<ul style="list-style-type: none"> <li>• Writing exam</li> </ul>	
--	--

**1. Course Code****2. Course Title**

Introduction to Business Japanese

**3. Teacher**

Kaori Yamashita, Seiko Kondo

**4. Term and Schedule**

F1,F2,F3 (20 weeks) Tue 4~5(120 min) Sat 1~2(120 min)

**5. Course Overview and Objectives**

In this course, you will learn basic conversations, words and expressions to communicate in Japanese in concrete situation. To communicate clearly it is important to know Japanese grammar. In this course you will also learn basic Japanese grammar step by step.

Learning a new language is like opening a door to a new world. You will have to try do a lot of simulations of different situations in Japanese life. They will help you to understand a different culture and people whose background is different from your own.

In this course, the complete acquisition of Japanese characters, hiragana and katakana is not obligatory but I highly recommend that you learn them because they will enhance your study of the Japanese language. If you want to take examination of JLPT in next July, you have to learn them perfectly.

**6. Course Goals (Attainment Targets)**

- (1) You will be able to communicate in Japanese in many everyday situations at a level
- (2) You will be able to talk yourself adequately in Japanese.
- (3) You will be able to use the grammatical expressions in basic Japanese correctly (nominal, verbal, and adjectival sentences.)
- (4) You will be able to read Japanese characters (Hiragana, Katakana and some basic kanjis.)
- (5)
- (6)

**7. Course Requirements (Courses / Knowledge prerequisite for this course)****8. Textbooks (Books required to have to take this course)**

Painless Japanese Hiragana/Katakana. JP Kikaku,2015.

Nihongo yonjuugo jikan (Japanese in 45 Hours) Senmonkyoiku syuppan,2007

**9. Reference Books (optional books for further study)****10. Requirements for Successful Completion**

In order to get "pass" grade, you should have a high rate of attendance (at least 80%).

**11. Notes**

## 12. Course plan

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

---

Lesson 1:	Lecture and exercise 120Min.
-----------	---------------------------------

---

Introduction: Letters (Hiragana, Katakana etc.) , Greeting

---

Lesson 2-3	Lecture and exercise 120Min.*2
------------	-----------------------------------

---

Chapter 1 -1) Aoki-san wa sensee desu. 2)Kore wa nihongo no jishyo desu.

---

Lesson 4-6	Lecture and exercise 120Min.*3
------------	-----------------------------------

---

Chapter 2 -1)Ginkoo wa asoko desu. 2)resutoran wa nangai desu ka. 3) Ima yoji desu.

---

Lesson 7-8	Lecture and exercise 120Min.*3
------------	-----------------------------------

---

Chapter 3 - 1)Kore wa ikura desu ka. 2)Koochii o futatusu onegaishimasu.

---

Lesson 9-11	Lecture and exercise 120Min.*3
-------------	-----------------------------------

---

Chapter 4 -1)Kazoku wa nan nin desu ka. 2)Kazoku wa chichi to haha to ototoo desu. 3) Chichi wa yonjuyugo sai desu.

---

Lesson 12 -14	Lecture and exercise 120Min.*3
---------------	-----------------------------------

---

Chapter 5 -1)Ginkoo wa arimasu ka. 2)Ginkoo wa eki no mae ni arimasu. 3)Lii-san wa kyooshitsu ni imasu.

---

Lesson 15 -18	Lecture and exercise 120Min.*4
---------------	-----------------------------------

---

Chapter 6 -1) Ashita Dizuniirando e ikimasu. 2)Raigetsu kuni e kaerimasu. 3)Shichi gatsu juuni nichi ni Nihon e kimashita. 4)Kinoo tomodachi to issyoni depaato e ikimashita.

---

Lesson 19 - 21	Lecture and exercise 120Min.*3
----------------	-----------------------------------

---

Chapter 7 - 1) Nihongo wa yasashii desu. 2)Tookyoo wa hito ga ooi desu. 3)Paatii wa tanoshikatta desu.

---

**1. Course Code**

単位無

**2. Course Title**

Japanese in business situations

**3. Teacher**

Kaori Yamashita

**4. Term and Schedule**

S1,S2 (15 classes) Sat 1~2(120 min)

**5. Course Overview and Objectives**

This course emphasizes intercultural understanding to interact successfully as a non-Japanese person in Japanese society and business environments. We will acquire conventional social protocol and business etiquette that is considered indispensable in Japan, also focus on studying for a test-preparation before the JLPT (Japanese-Language Proficiency Test) in July.

**6. Course Goals (Attainment Targets)**

- To understand Japanese social protocol and minimum business etiquette appropriate to
- (1) Japanese business customs.
  - (2) To avoid possible misunderstandings in Japanese society and in the future business with Japanese superiors and coworkers.
  - (3) To understand primary business-related vocabulary, conversational business phrases and honorific expressions.
  - (4) To pass N5 of the JLPT
  - (5)
  - (6)

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

M1/M2 students who complete "Introduction to Business Japanese" of the fall term, or students

**8. Textbooks (Books required to have to take this course)**

None

**9. Reference Books (optional books for further study)**

"Japanese for Business - Business manner" ALC Press Inc. 2016

**10. Requirements for Successful Completion**

Students who attend at least 80% of the sessions and score more than 60 points on the final exam in this course will receive "pass" grade.

**11. Notes**

Please note that some Japanese language skill is preferable for your successful internship

**12. Course plan**

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

Lesson 1-5: Japanese social protocol	(lecture, 120min*5)
▪ Greetings	
Lesson 6-10: Japanese business etiquette	(lecture, 120min*5)
▪ Exchanging business cards	
Lesson 11-14: Practical conversations in business situations	(lecture, 120min*4)
▪ Greetings	
Lesson 15: Evaluation and confirmation of understanding	(lecture, 120min)
▪ Writing exam of Social protocol & Business etiquette	