

INFORMATION SCIENCE AND ENGINEERING

1. PURPOSE OF THE COURSE

Refer to the each sub-course.

*The each sub-course is related with the concept “Advanced Information Technology Research”.

2. TRAINING PROGRAM

(1) Briefing, General Orientation and Japanese Language Program

Briefing, The General Orientation and Japanese Program are organized at the Chubu International Center of JICA prior to the technical training, to assist participants in understanding Japan and adjusting themselves to life in Japan, and thus to facilitate effective training.

(2) Technical Training

Refer to the each sub-course. (Total: four sub-courses)

3. NUMBER OF PARTICIPANTS TO BE ENROLLED

Maximum 6 persons

4. TRAINING DURATION

From March 9, 2015 to October 24, 2015

(1) Arrival in Japan

March 9, 2015

(2) Briefing

March 10, 2015

(3) General Orientation

From March 11 to 13, 2015

(4) Japanese Language Program

From March 16 to May 6, 2015

(5) Technical Training

From May 8 to October 21, 2015

(6) Closing Ceremony

October 23, 2015

(7) Departure from Japan

October 24, 2015

5. TRAINING INSTITUTION

(1) Briefing / General Orientation / Japanese Language Program

▼ Chubu International Centre (JICA Chubu), JICA

4-60-7, Hiraike-cho, Nakamura-ku, Nagoya, Aichi, 453-0872, Japan

Tel: +81(*)-52(**)-533-0220 Fax: +81(*)-52(**)-564-3751

URL: <http://www.jica.go.jp/english/contact/domestic/>

(2) Technical Training

▼ Kansai International Center (JICA Kansai), JICA

1-5-2, Wakinohama-Kaigan-dori, Chuo-ku, Kobe, Hyogo, 651-0073, Japan

Tel: +81(*)-78(**)-261-0341 Fax: +81(*)-78(**)-261-0342

URL: <http://www.jica.go.jp/english/contact/domestic/>

(*) country code of Japan (**) area code

6. CONDITIONS OF APPLICATION

(1) Applicants should have graduate degree in a certain scientific or engineering educational course

of a university or an institute of technology, showing the certified list of subject items with the marks obtained in each subject.

- (2) Applicants should have an adequate ability in English conversation to be able to perform satisfactorily in the course. (TOEFL score: more than 490)
- (3) Applicants should be good in health, both physically and mentally, to undergo the training; pregnancy is regarded as a disqualifying condition for participation in the training.
- (4) Applicants should not be presently serving in the military.

7. APPLICANTS MUST SUBMIT ANNEX WITH THE APPLICATION DOCUMENTS

- (1) Applicants should submit the certified list of subject items with the marks obtained in each subject issued by a university or an institute of technology.
- (2) Applicants should decide their order of preference 1st ~ 5th from the following five sub-courses. Once an applicant decides, he/she should write the order of preference in annex sheet. This will be used only as a reference for the screening committee.

Note: Applicants should be capable enough to pursue any of the sub-courses in order for the training institute to have a wider range of decision on screening. This is why any lack of preferences may result in an unsatisfactory application.

- (3) Applicants are required to answer the questions on annex sheet.

Sub-course Title: Distributed Software Integration and Applications for Internet

Purpose of the Course:

The participants are expected to have experiences on Internet system integration and programming for concurrency and distributed objects.

For example, the participant will have an experience of designing a (prototyped) Web system, installing open source software, and programming to implement the system.

Course Description:

Designing a prototyped system:

Examples are: Scheduling management; Customer support; Education support; and Sensor network systems.

Integrating open software (suggested)

- (1) Web server e.g., Apache, Tomcat
- (2) Database, e.g., MySQL, PostgreSQL
- (3) Language processors, e.g. Java, PHP, etc.
- (4) IDE tool: Eclipse (optional)

Programming and debugging

- (1) Programming using Java Servlets, JDBC, and JSP; otherwise,
- (2) Programming using J2EE frameworks (such as JBoss, Struts, Hibernate, etc.), otherwise
- (3) Rapid agile programming using Light-weight Languages (LL), such as PHP, Perl, Python, Ruby etc, and their frameworks (Ruby on Rails, Django, TurboGears for Python)
- (4) Other methodologies, if proposed, are left for discussions.

Hardware and software environment:

- (1) A desktop computer of exclusive use for development
- (2) A laptop computer of exclusive use for development
- (3) Other desktop/laptops are available for debugging
- (4) Basically free software is recommended,
- (5) Multimedia tools on Windows (Vista/XP) to be purchased, if needed.

Sub-course Title: Applications on the Internet

Purpose of the Course:

The participants are expected to know fundamental technologies necessary for constructing the Internet system and how to create applications (e.g. Disaster Mitigation Systems on Internet) which extensively use the technologies.

Course Description:

The participants learn technologies of Internet system including following concepts.

- (1) WWW, HTML, XML, Ajax
- (2) Java, Servlet, JSP
- (3) Database
- (4) Web application (HTML/CSS/JavaScript)

Hardware and Software Environment:

- (1) Computers: Windows Vista/7/8 and Linux
- (2) Computer softwares:
 - Java, C/C++
 - Database (MySQL, PostgreSQL)

Sub-course Title: Intelligent Systems Design

Purpose of the Course:

The participants are expected to learn design methodologies for intelligent systems by applying artificial intelligence (AI) technologies.

Course Description:

Suggested projects include the following steps:

- (1) Intelligent robots: robot control, bio-instrumentation, and other intelligent robotics technologies
- (2) Fuzzy systems: fuzzy logic and artificial neural net, and their applications
- (3) Intelligent computer systems: expert systems, knowledge acquisition, game programming, and others.

Hardware Environment:

- Windows-XP/Vista workstations
- Robots (e.g., AIBO)
- Bio-instrumentation systems

Software tools:

- Java, C/C++, other softwares

Sub-course Title: Multimedia Technology

Purpose of the Course:

Multimedia means the computer technology which deals with various information including texts, (movie) pictures and sounds together with the media which store or communicate these data. This technology is very important for the advanced human computer interaction, for example Web site construction to make the Web pages attractive and easy to understand. The aim of this course is to learn first the basics of multimedia technology and then construct some application including various practical multimedia applications. Mixed reality and augmented reality technologies are also included in this course.

Course Description:

Possible programs for this course may be as follows, though it will be changed according to the background and purpose of the student:

- Basics of Multimedia Technology
Meaning of multimedia, audio technology, video technology
- PC Architecture for multimedia applications
Study of the multimedia functions of MS Windows (multimedia device type, media control interface, capturing audio data, capturing video data etc.)
- Authoring Technique
Authoring tools, screen and objects, Events and actions, script programming.
- Project to develop a multimedia application
Project design, collecting multimedia data, programming and assembling,
- Real-time visualization techniques, including modeling of human body, 3D city, texturing for rendering such models

Hardware and Software environments

OS: Linux, MS Windows, and others

Softwares: visualization tools for 3D graphics, programming kit for mixed reality

Exclusive use of a desktop computer for the project study

ANNEX

Japan-Mexico Training Program for the Strategic Global Partnership JFY2014-2015

Full Name	
Where to contact	Tel. Fax. Email.
TOEFL Score	

Please refer to the course information and write your order of first to sixth preference below.

Sub-course title	Your order
Distributed Software Integration and Applications for Internet	
Java Applications on the Internet	
Intelligent Systems Design	
Multimedia Technology	

Describe the subject of your interest and explain what kind of skill you want to acquire through this course.

Write your work experience

To participate in this course,

☐ I quit my job ☐ I keep my position at work ☐ Others ()

Explain how you would like to use your training experience on your return.

Introduce yourself

You must attach the certified list of subject items with the marks obtained in each subject issued by the university or institute of technology that you graduated from.