

**ENVIRONMENTAL ASSESSMENT
IN INFRASTRUCTURE DEVELOPMENT**

May 5, '98 - Jul. 18, '98, 8 participants

社会資本関連環境影響評価

J-98-00574

- PURPOSE** To contribute to harmony of development and environmental preservation in participating countries by training civil engineers in the techniques required in environmental assessment, assessment of effects on environment, measures for environmental preservation, etc. for minimizing the effects of infrastructure development on environment, maintaining favorable environment for the people, and for preserving nature.
- MAIN FEATURES OF CURRICULUM** This course consists of lectures, observations, group studies, and study tours as follows. (1) regional plans (2) environmental plans (3) environmental assessment (4) environmental projections (5) environmental preservation measures (6) assessment of effects on environment
* Under the word "Environment", this course deals with water quality, noise, vibration, air quality, animals and vegetation
- QUALIFICATION OF APPLICANT** (1) university graduate in civil engineering or equivalent (2) five or more years of experience in infrastructure development administration (3) under 40 years old in age
- TRAINING INSTITUTIONS** (1) Osaka International Centre (OSIC), JICA (2) Engineering Affairs Management Section, Minister's Secretariat, Ministry of Construction (MOC) (3) International Affairs Division, Economic Affairs Bureau, MOC (4) Planning Department, Kiaki Regional Construction Bureau, MOC (5) Japan Construction Training Center Foundation (JCTC)
- REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for one week.

**EXECUTIVE SEMINAR ON PUBLIC WORKS
AND MANAGEMENT**

Oct. 12, '97 - Oct. 23, '97, 8 participants

土木技術マネジメント幹部セミナー

J-98-00587

- PURPOSE** This seminar is intended for executive engineers in leading posts to prepare and promote public works research and development in Asian countries. The purpose of this seminar is to improve executive personnel who can efficiently and properly contribute to implementation of infrastructure and public works, thus leading to development of each country.
- MAIN FEATURES OF CURRICULUM** In this seminar, the emphasis is put on the report presentation, discussion in the field of public works, and study trip. It mainly covers: (1) presentation of Country Report (2) introduction and analysis of the current situation and problems of public works in developing countries and Japan (3) discussion on specific subjects (4) study trip
- QUALIFICATION OF APPLICANT** (1) university graduate or equivalent in the field of public works engineering (2) director general or equivalent high-ranking officials responsible for management or administration of public works in government or research institutions
- TRAINING INSTITUTIONS** (1) Tsukuba International Centre (TIC), JICA (2) Public Works Research Institute, Ministry of Construction

RIVER AND DAM ENGINEERING II

Aug. 17, '98 - Nov. 26, '98, 10 participants

河川及びダム工学 II

J-98-00169

- PURPOSE** This course is aimed at introducing the latest information and technology in the field of river and dam engineering to the participants presently engaged in flood control or water resources development project.
- MAIN FEATURES OF CURRICULUM** (1) Participants will be divided into two groups, the river group and the dam group. The course consists of three parts: one and half months of common subjects for both groups, one month of specialized subjects designed for each group, three weeks' on site survey and field tour and one week of individual research work in the laboratory. (2) specialized subjects for the river group are as follows: (a) river dynamics (b) comprehensive flood loss prevention (c) channel planning/design water level (d) embankment, revetment, groynes (e) sediment hydraulics/exercise (f) sabo planning (g) land slide prevention planning (h) design of sabo facilities/exercise (i) river management (j) flood control and drainage (k) naturally diverse construction method (3) specialized subjects for the dam group are as follows: (a) outline of dam planning (b) geological investigation for dam construction (c) foundation treatment (d) design and construction of dam/exercise (e) design of spillway and gate/exercise (f) earthquake resistant design of dams (g) safety management of dams (h) operation and management of reservoirs (i) multipurpose dam law (j) case studies of dam designing (k) execution of dams.
- QUALIFICATION OF APPLICANT** (1) presently engaged in flood control works or water resources development projects (2) university graduate or equivalent with basic knowledge in civil engineering (3) occupational experience of more than five years in the field of execution of flood control works or water resources developments projects (4) under 40 years of age
- TRAINING INSTITUTIONS** (1) Tsukuba International Centre (TIC), JICA (2) River Bureau, Public Works Research Institute, Ministry of Construction
- REMARKS** (1) An intensive Japanese language course will be conducted prior to the technical training for one week (25 hours).

CITY PLANNING II

Aug. 17, '98 - Oct. 18, '98, 10 participants

都市計画 II

J-98-00027

- PURPOSE** The purpose of this course is to introduce city planners who are directly engaged in city planning to fundamental knowledge and technique of city planning experienced in Japan. These include information on the city planning systems, urban development works and the direction of future policy in Japan, which are useful for comparative studies. The participants will also be suggested to find a way how to deal with the problems of their own towns and cities by exchanging their views and experiences on the occasion of presentation of the Country Report prepared by participants.
- MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on introduction of Japanese systems and situations as follows: (1) city planning methods and urban development projects (2) planning and provision of urban transport (3) present housing situation (4) environmental aspects of urban development and urban transport (5) "kukaku-seiri" (Japanese method of urban land readjustment) applicable both to built-up and suburban areas (6) social, economic and institutional aspects of city planning
- QUALIFICATION OF APPLICANT** (1) university graduate or equivalent with occupational experience of more than three years (2) presently engaged in city planning (3) under 40 years of age
- TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) City Bureau, Ministry of Construction
- REMARKS** Country Reports will be highly utilized both for the selection of participants and for the Country Report presentation.

**URBAN DEVELOPMENT (FOCUSED ON
LAND READJUSTMENT MEASURES)**

May 12, '98 - Jul. 5, '98, 10 participants

都市整備

J-98-00325

- 1. PURPOSE** The purpose of the course is to introduce the participants through lectures and observations to land readjustment methods and projects carried out in Japan with specific objectives and their background; at the same time, provide the participants with opportunities to exchange views on urban development, so as to contribute to the acquisition of practical knowledge for their purposes.
- 2. MAIN FEATURES OF CURRICULUM** In this course, the following major subjects will be covered through lectures, discussions, practices and observation trips. (1) Japanese systems and methods of kukaku-seiri (Japanese method of urban land readjustment) applicable both to build-up and suburban areas (2) Japanese systems and methods of new town development (3) Japanese systems and methods of urban renewal (4) social background and problems which lead to the above-mentioned urban development activities (5) policies and methods of urban development in each participating country
- 3. QUALIFICATION OF APPLICANT** (1) university graduate or equivalent with occupational experience of more than three years (2) under 40 years of age (3) presently engaged in planning and/or implementation of urban development and redevelopment
- 4. TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) City Bureau, Ministry of Construction
- 5. REMARKS** Country Reports will be highly utilized both for the selection of participants and for the country report presentation.

HOUSING POLICY II

Oct. 15, '98 - Nov. 29, '98, 15 participants

住宅政策 II

J-98-00583

- 1. PURPOSE** The purpose of the course is to provide participants with examples and experiences of Japanese housing policies and administration as well as to contribute to the development of human living conditions in their countries.
- 2. MAIN FEATURES OF CURRICULUM** The course mainly consists of lectures, discussions, and observations, to cover the following themes: (1) outline of housing policies in Japan (2) general knowledge of housing administration, such as knowledge related to financial systems, new town development and urban renewal plans.
- 3. QUALIFICATION OF APPLICANT** (1) a mid-career official in charge or expected to take charge of housing policy at the central or local government level or at a related governmental organization (2) an university graduate or the equivalent (3) over 30 but under 40 years of age.
- 4. TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Housing Policy Division, Housing Bureau, Ministry of Construction (3) Building Center of Japan (BCJ)
- 5. REMARKS** This course is conducted alternately with "Seminar on Improvement of Housing and Living environment" every other year. This year (Japanese fiscal year 1998), "Housing policy" course is conducted.

**SEMINAR ON IMPROVEMENT OF HOUSING
AND LIVING ENVIRONMENTS**

not executed in FY 98

住宅・住環境改善セミナー

- 1. PURPOSE** The purpose of the seminar is to provide knowledge that will enable participants to contribute to the planning and management of housing and living environment projects in their own countries through providing better understanding of the Japanese system for housing and living environment projects as well as actual problem-solving measures that can be utilized.
- 2. MAIN FEATURES OF CURRICULUM** The seminar is discussion-oriented. Study report making and presentations by each participant is also a major part of the seminar. The themes to be covered are; (1) problems and countermeasures in developing countries (2) ways to manage housing and living environment projects (3) necessary knowledge for policy formulation
- 3. QUALIFICATION OF APPLICANT** (1) experienced official in charge of executing various developmental projects on housing and living environments at the central or local government level, or at a related governmental organization, and being expected to play a leading role in the said field (2) over 30 but under 45 years of age (3) university graduate or equivalent
- 4. TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Housing Bureau, Ministry of Construction (3) Building Center of Japan

ARCHITECTURAL ENGINEERING

May 7, '98 - Jun. 28, '98, 12 participants

建築技術

J-98-00270

- 1. PURPOSE** The purposes of the course is to provide participants with the latest information and knowledge concerning Japanese architectures and building technology so that the participants would be able to play a greater role for further progress and advancement of architectures and building technology in their respective countries.
- 2. MAIN FEATURES OF CURRICULUM** The course consists of lectures (regulation and standard, and building technology in Japan) and visits to related organizations. The following themes are covered. (1) Japanese architectures and building technologies including the social and economic background (2) cross-cultural perspective of architectures and building technologies (3) appropriate mode of building technologies in each participating country
- 3. QUALIFICATION OF APPLICANT** (1) official of the government or related governmental organization and expected to have leading position in architectural construction field (2) under 40 years of age (3) university graduate or equivalent with occupational experience of more than five years and with the general knowledge in the broad field of building or architectural engineering such as building administration, architectural designing and structural engineering
- 4. TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Housing Bureau, Ministry of Construction (3) Building Centre of Japan (BCJ)
- 5. REMARKS** Country Reports will be highly utilized both for the selection of participants and for the Country Report presentation.

SURVEYING AND MAPPING II

Aug. 3, '98 - Jul. 4, '99, 8 participants

測量技術 II

J-98-00048

- PURPOSE** This course is designed to contribute to upgrading the comprehensive knowledge of the participants concerning the overall process of surveying and mapping, and thus enable them to play important roles in nationwide projects in this field.
- MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on introduction of comprehensive knowledge and techniques in the whole process of surveying and map making including GPS, VLBI, GIS and remote sensing, etc. through lectures, discussions, workshop, practice and field trips. It mainly covers; (1) survey planning (2) geodetic surveying (3) cadastral survey (4) photogrammetry (5) map compilation (6) geographical survey (7) map reproduction (8) geographical information system
- QUALIFICATION OF APPLICANT** (1) surveyor presently in charge of surveying or mapping with more than three years of occupational experience in this field (2) university graduate or equivalent (3) over 25 and under 35 years of age
- TRAINING INSTITUTIONS** (1) Tsukuba International Centre (TIC), JICA (2) Geographical Survey Institute (GSI)
- REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks (50 hours).

NAUTICAL CHARTING

not executed in FY 98

海図作製

- PURPOSE** The purpose of the course is to provide participants with: (1) modern theory of nautical charting based on the format established by the International Hydrographic Organization (2) knowledge and techniques in drawing thematic charts to be used for preservation of marine environment and utilization of the ocean. In addition, the participants will be trained to be familiarized with computer mapping technology, since information science and computers technology is advancing day by day.
- MAIN FEATURES OF CURRICULUM** The curriculum of the course comprises of lectures and practices in classroom, field training using a ship, and observation and study tours. The following subjects will be covered in the course. (1) lecture (a) nautical charting (b) geodesy (c) general aspect of navigation (d) introduction to computers (e) electronic navigational chart and computer assisted cartography (2) practice (a) nautical charting (b) electronic navigational chart and computer assisted cartography (3) field training (a) navigation (aboard survey vessel Shoyo 1,900 T/T) (b) investigation of ports and harbours
- QUALIFICATION OF APPLICANT** (1) currently in engaged or soon to be engaged the national hydrographic office or other organizations which are engaged in carrying out hydrographic survey for the safe navigation of ships, nautical charting and oceanographic surveys for utilization of the ocean (2) under 35 years of age (3) junior college/special school graduate or equivalent (4) have basic knowledge of computers
- TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Hydrographic Department, Marine Safety Agency
- REMARKS** The course is conducted every other year. This year (Japanese Fiscal Year 1997), this course will be conducted.

HYDROGRAPHIC SURVEY (INTERNATIONAL ACCREDITED CATEGORY B COURSE)

Apr. 2, '98 - Nov. 8, '98, 10 participants

水路測量(国際認定B級)

J-98-00493

- PURPOSE** The course is designed to upgrade knowledge of modern theory and technique of hydrographic survey for personnel engaged in the field of nautical charting and port and near shore surveys at the Category B level of the International Standards of Competence for Hydrographic Surveyors.
- MAIN FEATURES OF CURRICULUM** The curriculum of this course is strictly complying with the requirements under the International Standards of Competence of Hydrographic Surveyors, 7th edition, 1994. The following are the major subjects to be covered in the course. (1) lectures: computing, physics, hydrography (control and practice), environmental aspects, legal aspects, nautical science, nautical charting surveys, port and harbour surveys, electronic chart (2) practice data processing of harbour and coastal surveys, computer programming, control surveys, astronomy, cartography (3) field training on board survey vessels: harbour and coastal surveys, automatic hydrographic data acquisition system, navigation, seamanship, submarine geology
- QUALIFICATION OF APPLICANT** (1) technical college graduate or equivalent with at least two years occupational experience in hydrographic services (2) have obtained credits for two years' course of mathematics and physics at least on the level of technical college or equivalent educational institution (3) presently employed at the national hydrographic office or other pertaining organization responsible for carrying out hydrographic surveys of sea areas (4) not more than 40 years of age
- TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Hydrographic Department, Maritime Safety Agency
- REMARKS** On each subject, participants are required to pass an examination for the certificate of Category B Hydrographic Surveyor accredited by FIG/IHO International Advisory board. The certificate will not be awarded to the participant who has failed to pass the examination, and to cover necessary subjects due to insufficient attendance at lectures and field training.

RADIO FREQUENCY MONITORING II

Aug. 20, '98 - Oct. 9, '98, 10 participants

電波監視 II

J-98-00180

- PURPOSE** The purpose of this training course is to: (1) provide fundamental knowledge of radio frequency monitoring. (2) provide fundamental knowledge of radio regulatory schemes in Japan (3) provide knowledge of monitoring equipment utilized in Japan.
- MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on introduction of basic theory of radio monitoring and the system and techniques in Japan. The main themes of the course are; (1) outline of radio regulatory administration and legal system for radio regulations (2) practice of radio planning and monitoring
- QUALIFICATION OF APPLICANT** (1) person with practical experience in the field of radio regulatory administration (radio frequency monitoring, frequency management, etc.) (2) under 40 years of age (3) college graduate or equivalent
- TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) International Cooperation Division, Ministry of Posts and Telecommunications

POSTAL EXECUTIVES' SEMINAR II

Feb. 18, '99 - Mar. 2, '99, 12 participants

郵便幹部セミナー II

J-98-00098

- PURPOSE** The purpose of this seminar are to provide the participants with the knowledge of current situations of postal services in Japan, and opportunities to examine and exchange views on the problems common among the participating countries through lectures, discussions and observations.
- MAIN FEATURES OF CURRICULUM** In this seminar, the emphasis is put on introduction of Japanese situations and exchange of views.
The General Theme is: Prospective Postal Services for the 21st Century. The Individual themes are; (1) Postal Services and Telecommunications (a) Promotion of automation and advanced information technology in postal systems (b) Postal services that readily incorporate telecommunications (2) Strategy of International Postal Services (a) Present competitive environment surrounding international postal services (b) International cooperation for development of international postal services
- QUALIFICATION OF APPLICANT** (1) director general or, at the least, an official who is higher than directors of the general affairs division in the central governmental organization, or be directors general or deputy directors general in regional postal bureaus
- TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Postal Bureau, Ministry of Posts and Telecommunications (MPT)

EXECUTIVE'S SEMINAR ON POSTAL SAVINGS SERVICES

Jan. 17, '99 - Jan. 31, '99, 8 participants

郵便貯金国際幹部セミナー

J-98-00403

- PURPOSE** The purposes of the seminar are: (1) to seek solutions to common problems in the participating postal administrations or national savings organizations, after providing know-how on the Japanese postal savings services and Japanese financial environmental through a series of lectures and visits to related facilities. (2) to promote further mutual understanding and closer cooperation among all the participating countries and Japan in the financial field through discussions and presentations.
- MAIN FEATURES OF CURRICULUM** This seminar covers the following topics. (1) general introduction of Japanese postal banking (a) Outline and characteristic (b) History and background (c) organization and human development (2) management of Japanese postal savings (a) products and services (b) sales promotion activities (c) fund management (d) computerization (e) international business (3) introduction of Japanese financial system (1) financial deregulation, fiscal investment and loan programme (2) Japanese Financial System (4) Visits to related facilities (5) Participants' Country Report Presentation
- QUALIFICATION OF APPLICANT** (1) director or high-ranking official of savings organizations (Postal Savings Organization or, national/government Savings Bank) or Postal Money Order and Postal Giro Organization
- TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Ministry of Posts and Telecommunications

INTERNATIONAL TELECOMMUNICATION SERVICES (ADMINISTRATION AND COMMERCIAL) II

May 12, '98 - Jul. 10, '98, 11 participants

国際通信業務管理 II

J-98-00024

- PURPOSE** This course is designed to renew and upgrade participants' knowledge and skill in administration and management of international telecommunication services through the study of both conventional and the latest telecommunication technologies and various services.
- MAIN FEATURES OF CURRICULUM** The curriculum mainly features lectures, discussions and practical exercises on (1) management and public relations activities (2) system and technologies (3) service and operation. Observation trips to relevant facilities are integrated to augment the programme. Participants are required to make a presentation on their future perspectives at the end of the course.
- QUALIFICATION OF APPLICANT** (1) university graduate or equivalent with occupational experience of more than five years in the field of international telecommunication services (2) presently engaged in administrative and managerial work of international telegraph or telephone services (3) under 45 years of age
- TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Kokusai Denshin Denwa Co., Ltd. (KDD) (3) KDD Engineering and Consulting Inc. (KEC)

TELECOMMUNICATIONS EXECUTIVE'S SEMINAR II

May 26, '98 - Jun. 10, '98, 11 participants

電気通信幹部セミナー II

J-98-00064

- PURPOSE** This seminar is designed to: (1) promote more cooperative relationships in the field of telecommunications, (2) familiarize the participants with the current situation in telecommunications administration and in the telecommunications business, (3) invite the participants to discuss improvement and expansion of telecommunications networks, which are crucial topics in every country.
- MAIN FEATURES OF CURRICULUM** In this seminar, the emphasis is put on introduction of the Japanese system and discussion among participants. The main themes are: (1) present status of telecommunications (2) telecommunications administrations (3) reform of telecommunications legal structures (4) new services, and (5) human resources development.
- QUALIFICATION OF APPLICANT** Directors-General or equivalent high-ranking officials responsible for management or administration for public telecommunications in governmental or operational organizations.
- TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) International Cooperation Bureau, Ministry of Posts and Telecommunications

NETWORK BASIC ENGINEERING COURSE

Oct. 6, '98 - Nov. 20, '98, 12 participants

通信網基本技術(交換技術者)

J-98-00592

- 1. PURPOSE** The purpose of the course is to introduce the configuration, maintenance and series of procedures from traffic forecasting to plant design of digital switching systems.
- 2. MAIN FEATURES OF CURRICULUM** In this course, major technical aspects related to a telecommunications network will be discussed. Main focus, however, will be placed upon switching technology. The course curriculum covers; (1) digital switching system, using D70 system as an example (2) outline of such peripheral technology as transmission, radio communication, outside plant, common channel signalling, ISDN, etc. (3) traffic management, equipment estimation, maintenance management, economic comparison, etc. (4) practical exercise on D70 system.
- 3. QUALIFICATION OF APPLICANT** (1) university graduate specializing in telecommunications and/or electrical engineering or equivalent (2) under 40 years of age (3) working for common carrier organizations with at least five years of practical experience on their own switching systems
- 4. TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Central Training Institute (CTI), Nippon Telegraph and Telephone Corporation (NTT)

INTERNATIONAL DATA ENGINEERING AND APPLICATIONS

Sep. 1, '98 - Oct. 24, '98, 11 participants

国際データ応用技術

J-98-00267

- 1. PURPOSE** The purpose of this course is to introduce to participants fundamental and up-to-date technology of international data communications such as data transmission, switching systems, communications protocols, terminal equipment, etc., through lectures as well as practice sessions at Kokusai Denshin Denwa Co. Ltd. (KDD).
- 2. MAIN FEATURES OF CURRICULUM** The emphasis is put on introduction of theories mainly on the following subjects; (1) Introduction (new technology trends, trends in digital communications) (2) Switching System (software, packet switching, frame relay, ISDN, MHS, multimedia application, private link network, internet) (3) Transmission System (SDH, Immarsat and Mobile Communication System, Digital Satellite Communications, Optical Fiber Network and Technology, Network Management) (4) Research and Development (Multimedia Terminals, Multimedia Application, Image Compression Technology, ATM & B-ISDN)
- 3. QUALIFICATION OF APPLICANT** (1) university graduate specializing in telecommunications and/or electrical engineering or equivalent (2) have basic knowledge of computer hardware, software and currently engaged in or expected to be engaged in the planning or the policy making of international data communications engineering (3) have experience of more than three years in the field of data communications (4) under 40 years of age
- 4. TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Kokusai Denshin Denwa Co., Ltd. (KDD) (3) KDD engineering and Consulting Inc. (KEC)

FIBER OPTIC OUTSIDE PLANT ENGINEERING

Jan. 4, '99 - Mar. 15, '99, 10 participants

光線路技術

J-98-00333

- 1. PURPOSE** To train participants to be able to operate and maintain optical fiber transmission systems introduced or proposed in each country. The course outlines the basic theory of the optical fiber cable, optical devices, etc., and planning, designing and construction of the system. The training includes sufficient practical training in the transmission field.
- 2. MAIN FEATURES OF CURRICULUM** Lectures, practical exercises, discussions and observation tour. The main themes are: (1) Optical Fiber Line Technology; theory, characteristics, structure, design, cable construction technology (2) Digital Transmission Technology; principle, digital multiplex hierarchy, analog to digital conversion, synchronized multiplexing (3) Optical Fiber Transmission Technology; optical source and detector, line code, system design (4) Other Outside Plant Technology; maintenance technology, practical exercise of civil engineering, metallic line cable technology and design (5) Other Technology; digital exchange system, ISDN service, wireless local loops, PHS (6) Administration Techniques (7) Field Trip
- 3. QUALIFICATION OF APPLICANT** (1) university graduate or equivalent in telecommunication or electrical engineering (2) working for telecommunication administrations or telecommunication common carrier organizations for at least 5 years (3) having a knowledge of the basic concepts on the digital transmission engineering (4) under 40 years of age
- 4. TRAINING INSTITUTIONS** (1) Nagoya International Training Centre (NITC), JICA (2) Suzuka Training Institute, NTT
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted along with the technical training for 38 hours.

DIGITAL TRANSMISSION SYSTEMS ENGINEERING

Sep. 7, '98 - Nov. 29, '98, 12 participants

デジタル伝送技術

J-98-00344

- 1. PURPOSE** To introduce the practical knowledge for the designing and administrative techniques on digital transmission system.
- 2. MAIN FEATURES OF CURRICULUM** Lectures, practical exercises, discussions and observation tour. The main themes are: (1) digital transmission technology; digital multiplex hierarchy, analogue to digital conversion, synchronized multiplexing, video transmission system (2) optical fiber transmission technology; optical source and detector, line code, system design, transmission standard, transmission quality (3) optical fiber line technology, optical fiber transmission theory, characteristics of optical fiber, structure of optical fiber (4) microwave communication system; digital microwave communication, satellite communication, microwave network construction (5) relational technology; digital switching systems engineering, ISDN service, communication quality (6) planning design; transmission network, transmission line facility, digital radio-relay system, optical fiber cable (7) study tour & field trip
- 3. QUALIFICATION OF APPLICANT** (1) university graduate or equivalent in telecommunication or electrical engineering (2) working for telecommunication administrations or common carrier organization for at least five years (3) having a knowledge of the basic concepts on the digital transmission engineering (4) under 40 years of age
- 4. TRAINING INSTITUTIONS** (1) Nagoya International Training Centre (NITC), JICA (2) Suzuka Training Institute, NTT
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks (50 hours).

**TELECOMMUNICATION OUTSIDE PLANT ENGINEERING
TECHNIQUES (ON THE JOB TRAINING)**

Aug. 10, '98 - Dec. 5, '98, 10 participants

通信線路技術指導者育成

J-98-00404

- 1. PURPOSE** The principal purposes of this training course are: (1) to provide engineers with knowledge of telecommunication line engineering to improve their leadership (2) to help participants to understand line techniques, line operation, maintenance systems so that they can manage to solve their problems (3) to promote international understanding through group activities and joining local communities
- 2. MAIN FEATURES OF CURRICULUM** The course is conducted in the form of lectures, discussions and practice, emphasizing on the job training. Visits to related factories and industries are also arranged. The training subjects covered in the course are; (1) basic knowledge on outside equipment (2) construction (3) maintenance engineering (4) design engineering (5) construction and maintenance of communication equipment and devices (6) basic knowledge on inside plant (7) safety and quality control
- 3. QUALIFICATION OF APPLICANT** (1) telecommunication engineer or supervisor with three years' practical experience in outside plant systems of telephone (2) university graduate or equivalent (3) 35 years of age or less
- 4. TRAINING INSTITUTIONS** (1) Kyushu International Centre (KIC), JICA (2) Kitakyushu Branch, Nippon Telegraph and Telephone Corporation (NTT)
- 5. REMARKS** (1) A compulsory 75 hour-Japanese language course will be conducted prior to the technical training.

**INTERNATIONAL ISDN ENGINEERING
AND APPLICATIONS**

Sep. 1, '98 - Oct. 24, '98, 11 participants

国際ISDN応用技術

J-98-00457

- 1. PURPOSE** The purpose of this course is to introduce the participants to fundamental knowledge about up-to-date international ISDN services and technologies such as digital transmission, digital switching, and user network interface, etc., through lectures and field trips.
- 2. MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on introduction of theories mainly on the following subjects; (1) outline (a) new technology trends (b) outline of ISDN (c) broad band ISDN (2) basic technology and services (a) ISDN services (b) network operation (c) OSI (d) user-network interface (e) signaling system No. 7 (f) XC-31 FMBS (g) digital satellite communication system for ISDN (h) optical fiber transmission system (i) switching system terminals (j) ISDN layer/specification (k) terminals (3) related equipment (a) digital transmission (b) digital switching
- 3. QUALIFICATION OF APPLICANT** (1) engineer engaged in the field of international telecommunication (2) person with a fundamental knowledge of digital communications (such as digital transmission principles of PCM, multiplexing, synchronization and digital switching) (3) between 26 and 42 years of age
- 4. TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Kokusai Denshin Denwa Co., Ltd. (KDD) (3) KDD Engineering and Consulting Inc. (KEC)

RURAL TELECOMMUNICATION ENGINEERING

Feb. 8, '99 - Mar. 16, '99, 10 participants

ル-ラル通信技術

J-98-00458

- 1. PURPOSE** The purpose of the course is to introduce technological information on rural telecommunication systems to the participants so that they can acquire basic knowledge and skill concerning fundamental elements in making plans of actual network in rural areas of their countries.
- 2. MAIN FEATURES OF CURRICULUM** The first part of the curriculum includes lectures on rural telecommunication network designing method, and on various rural telecommunication systems. The second part is a drill practice, which is intended to simulate the rural telecommunication network designing augmented by the application of economic analysis.
- 3. QUALIFICATION OF APPLICANT** (1) university graduate specialized in telecommunications or equivalent (2) in charge of network planning or so scheduled (3) under 45 years of age
- 4. TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) New ITU Association of Japan, Inc. (ITU-AJ)

**INTEGRATED SERVICES DIGITAL NETWORK
BASIC ENGINEERING**

Jan. 6, '99 - Feb. 17, '99, 12 participants

ISDN基礎技術

J-98-00500

- 1. PURPOSE** The purpose of the course is to provide engineers in the field of telecommunications with practical knowledge and techniques on the ISDN (Integrated Services Digital Network) basic technology, user-network interface, and peripheral technology necessary for introduction of ISDN services.
- 2. MAIN FEATURES OF CURRICULUM** This course is designed for participants to understand the following: (1) outline of ISDN, network configuration, ISDN numbering plan, etc. (2) layer 1, 2, 3, circuit switching, packet switching, etc. (3) ISDN terminal, standardization trend, B ISDN (ATM), etc. The major subjects are; (a) outline of ISDN (b) user-network interface (c) ISDN network (d) ISDN service and trend (e) ISDN terminal equipment (f) ISDN implementation plan (g) practical study of terminal and analysis of protocol
- 3. QUALIFICATION OF APPLICANT** (1) university graduate majored in telecommunication or electrical engineering, or equivalent (2) under 40 years of age (3) working in telecommunication administration or common carrier organizations with at least three years of practical experience on their own switching systems
- 4. TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Central Training Institute (CTI), Nippon Telegraph and Telephone Corporation (NTT)

**SEMINAR ON TELECOMMUNICATIONS
MANAGEMENT**

Oct. 5, '98 - Oct. 23, '98, 10 participants

電気通信経営管理セミナー

J-98-00507

- 1. PURPOSE** The seminar aims to improve the participants' skills in resolving management-related problems arising in their respective countries by furthering the understanding of techniques for managing telecommunications operations. The focus will be on the development of the telecommunications industry in Japan, the process of privatization, and ways of dealing with the changeover. A discussion of the latest technological trends in the field will suggest future directions for the telecommunication networks of the respective countries.
- 2. MAIN FEATURES OF CURRICULUM** This seminar covers the following topics. (1) management (2) planning (3) fund raising (4) equipment and material supply (5) training (6) marketing (7) privatization (8) overseas engineering cooperation (9) research and development (10) TQC (Total Quality Control)
- 3. QUALIFICATION OF APPLICANT** (1) manager or higher ranking staff involved in the telecommunications industry or organization
- 4. TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Nippon Telegraph and Telephone Corporation (NTT)

**DIGITAL TELECOMMUNICATION NETWORK
PLANNING AND DESIGNING**

Aug. 25, '98 - Oct. 16, '98, 15 participants

デジタル通信網計画設計

J-98-00508

- 1. PURPOSE** The purpose of the course is to provide engineers in the field of telecommunications with practical knowledge and techniques on the outline of systems, fundamental network design, and network planning.
- 2. MAIN FEATURES OF CURRICULUM** The curriculum comprises of three major components; namely (1) fundamental telecommunication network design (2) outline of various systems, and (3) telecommunication network planning. Case-study method is employed to obtain more concrete understanding of network planning. Observation trips to relevant factories and telecommunication facilities are planned to augment the training.
- 3. QUALIFICATION OF APPLICANT** (1) university /college graduate in telecommunication, electrical engineering or electronics, or equivalent (2) working in telecommunication common carrier organizations with minimum experience of 3 years (3) currently engaged in network planning or so scheduled (4) expected to continue working for network planning after participating in the course (5) between 25 and 45 years of age
- 4. TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Central Training Institute (CTI), Nippon Telegraph and Telephone Corporation (NTT)

SATELLITE COMMUNICATION ENGINEERING II

May 11, '98 - Jul. 18, '98, 11 participants

衛星通信技術 II

J-98-00099

- 1. PURPOSE** This course will provide those who are in charge of planning, management and operation of satellite communications, with the opportunity to increase basic knowledge of the latest technology in satellite communication engineering, so as to make good use of the merits of advanced satellite communications in establishing/improving/operating their systems.
- 2. MAIN FEATURES OF CURRICULUM** The curriculum mainly consists of lectures, discussions and practical exercises on (1) basic and advanced technologies of INTELSAT (2) basic and advanced technology of INMARSAT (3) some features of non-INTELSAT and non-INMARSAT systems (4) other related telecommunications systems (5) planning, administration and management in aspects (6) field practice at an earth station and observation trips to relevant facilities. Participants are required to take exams at the beginning and the end of the course.
- 3. QUALIFICATION OF APPLICANT** (1) university graduate in telecommunications and/or electrical/electronic engineering or equivalent (2) have fundamental knowledge of radio communication engineering such as microwave propagation, microwave elements and microwave communication system (3) have experience of not less than three years in this field (4) currently engaged in the field of satellite communication services (especially international ones) (5) under 45 years of age
- 4. TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Kokusai Denshin Denwa Co., Ltd. (KDD) (3) KDD engineering and Consulting Inc. (KEC)

BROADCASTING EXECUTIVE'S SEMINAR II

Oct. 18, '98 - Nov. 1, '98, 9 participants

放送幹部セミナー II

J-98-00139

- 1. PURPOSE** The purposes of this Seminar are to introduce Japanese experiences, in the process of broadcasting development as well as present broadcasting activities and its related industries in Japan, to the participants, and to examine common problems in the field and to seek solutions through lectures, discussions and observations.
- 2. MAIN FEATURES OF CURRICULUM** This seminar covers the following themes; (1) broadcasting situation in the participating countries (2) outline of Japanese broadcasters (organizations, activities, finances, management in general, etc.) (3) personnel management and training (4) different types of broadcasting technologies and their utilization (5) role and utilization of broadcasting in education
- 3. QUALIFICATION OF APPLICANT** director general or equivalent high-ranking official responsible for management or administration of broadcasting in governmental or operational organizations
- 4. TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Communication Policy Bureau, Ministry of Posts and Telecommunications

AUDIO BROADCASTING ENGINEERING

Jan. 5, '99 - Mar. 12, '99, 10 participants

音声放送技術

J-98-00105

- 1. PURPOSE** The purpose of the course is to provide audio broadcasting engineers with theoretical and practical knowledge of the intermediate level of audio technique, and MW and FM transmitting, through lectures, exercises and practices.
- 2. MAIN FEATURES OF CURRICULUM** Lectures and practice are provided upon (1) audio technique, (2) theory and practice of MW broadcasting, and (3) theory and practice of FM broadcasting. Field practice and observation trips to relevant broadcasting facilities are organized to enhance the curriculum.
- 3. QUALIFICATION OF APPLICANT** (1) person in a technical line who has practical experience in the field of audio broadcasting enough (more than three years) to undergo this training course (2) between 25 and 35 years of age (3) college graduate or equivalent in audio broadcasting (4) to continue working in the above mentioned field after returning to home countries.
- 4. TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) NHK Communications Training Institute

TELEVISION PROGRAMME PRODUCTION

Jul. 7, '98 - Sep. 18, '98, 10 participants

テレビジョン番組制作

J-98-00196

- 1. PURPOSE** Producers and programme directors working for broadcasting stations in participating countries will be given opportunity to learn general knowledge and technical skills of programme production methods used in musical, cultural, dramatized and documentary production methods, and will receive suggestions for enriching their own TV programmes.
- 2. MAIN FEATURES OF CURRICULUM** The curriculum consists of lectures on general concepts of educational television, and various production techniques, practical training in programme production, and observation of actual production sites and local NHK stations.
- 3. QUALIFICATION OF APPLICANT** (1) serving in a broadcasting corporation directly and continuously as a producer or director with practical experience of two to seven years in the field of television programme production (2) under 35 years of age (3) university/college graduate or equivalent
- 4. TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) NHK Communications Training Institute

TELEVISION ENGINEERING II

Jun. 30, '98 - Sep. 18, '98, 10 participants

テレビジョン放送技術 II

J-98-00577

- 1. PURPOSE** The purpose of the course is to systematically introduce knowledge of television broadcasting technology to participants who are engaged in the field of television broadcasting in participating countries. The training covers the technology of color television cameras, VTRs, studio equipment, transmission and reception.
- 2. MAIN FEATURES OF CURRICULUM** Lectures cover such topics as (1) color TV fundamentals and operation and maintenance of broadcasting equipment (2) programme production techniques (3) application of digital techniques (4) measurement and adjustment of broadcasting equipment and (5) recent technical development. Lectures are supplemented by practice. Field training in small groups are organized to enhance the programme.
- 3. QUALIFICATION OF APPLICANT** (1) engineer serving in a broadcasting organization with practical experience of three to five years in TV engineering (2) university/college graduate or equivalent in electronic engineering
- 4. TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) NHK Communications Training Institute

TELEVISION SOCIAL EDUCATION PROGRAMME II

Jan. 19, '99 - Mar. 12, '99, 10 participants

テレビジョン社会教育番組 II

J-98-00498

- 1. PURPOSE** The purpose of this course is to introduce production technology and methods of NHK educational TV programmes to the producers and directors who are engaged in socially informative TV programme production. The training will focus on educational TV programme production. The participants are expected to further understand importance of education by TV, and to acquire necessary programme production techniques such as planning ability, manner of presentation, etc. In addition, state-of-the-art technology and future prospects of the broadcasting field are also introduced.
- 2. MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on introduction of Japanese system and situation. The course mainly covers; (1) trends in social education TV program (2) methods of TV program production (a) issuing cues (b) "complete program" production method (3) production techniques (a) video location shooting (b) editing (4) new technology
- 3. QUALIFICATION OF APPLICANT** (1) serving and producing social education television programmes in a broadcasting corporation directly and continuously as a producer or director with practical experience of five to ten years (2) under 40 years of age
- 4. TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) NHK Communication Training Institute

AGRICULTURAL CO-OPERATIVES II

May 5, '98 - Jul. 5, '98, 16 participants

農業協同組合 II

J-98-00007

- PURPOSE** The purpose of this course is to provide participants engaged in the agricultural cooperative development with necessary information and knowledges on the methods and techniques for promoting the agricultural cooperative movement by introducing them the first-hand Japanese experiences.
- MAIN FEATURES OF CURRICULUM** This course consists mainly of lecture/discussion with more than 30% of its program being allocated to field trip. Main topics to be dealt with are: (1) ways to strengthen agricultural cooperative as well as to step up agricultural production through promoting formation of various members' voluntary groups including farm management group (2) cooperative activities for improvement of better living of member farmers and their families (3) method of performing democratic control, operation and management of agricultural cooperatives; and (4) method of formulating the long term perspective plans being drafted by agricultural cooperatives and their formulation exercise.
- QUALIFICATION OF APPLICANT** (1) university or professional school graduates who are now engaged in the office of cooperative development services (2) expected to work in the cooperative sector for more than five (5) years after their participation in the course (3) under forty-five (45) years of age
- TRAINING INSTITUTIONS** (1) Ilachioji International Training Centre (IITC), JICA (2) Institute for Development of Agricultural Cooperation in Asia (IDACA)

AGRICULTURAL EXTENSION SERVICE FOR LEADER II

May 5, '98 - Jul. 10, '98, 12 participants

農業普及指導者 II

J-98-00008

- PURPOSE** The participants, as agricultural extension leaders, are expected to plan and implement the training program for agricultural extension workers in their own countries. Through the training programme, participants are expected; (1) to acquire knowledge on the process in which present agricultural improvement & extension programs in Japan have been established through learning about the programs in Japan and their background in order to understand the factors of extension work (2) to compare the agricultural improvement & extension programs in their own countries with those in Japan through understanding the status quo of administration & management of the programs in Japan and point out the advantages and disadvantages of agricultural extension programs in their own countries (3) as a leader of agricultural extension services, to be able to make suggestions on the necessary measures to train extension workers in their own countries through understanding how extension programs in Japan are being proceeded (main extension methods and how to establish extension activities) (4) to understand how to educate and train extension workers who will take leadership in agricultural improvement & extension programs and to be able to apply the methods in their own countries
- MAIN FEATURES OF CURRICULUM** The following subjects are included through lectures, discussions and observation tours (1) Background of Extension Programs (2) Outline of Agricultural Improvement & Extension Programs (3) How to Proceed Extension Activities (4) Education & Training of Extension Staff (5) Application of the Training in their own countries
- QUALIFICATION OF APPLICANT** Applicants should: (1) be administrators for agricultural extension service or subject-matter specialists (SMS) who are engaged in training of extension workers, and have more than 5 years of occupational experience in this field (2) be under 50 years of age (3) be university graduates or have equivalent academic background (4) have a sufficient command of spoken and written English.
- TRAINING INSTITUTIONS** (1) Tsukuba International Center, Japan International Cooperation Agency (2) Extension and Education Division, Agricultural Promotion Bureau, Ministry of Agriculture, Forestry and Fisheries (3) Japan Agricultural Development and Extension Association

VEGETABLE CULTIVATION TECHNOLOGY FOR EXTENSION

Feb. 22, '99 - Sep. 18, '99, 9 participants

野菜栽培技術普及

J-98-00120

- PURPOSE** The purpose of this course is to provide introduce participants to practical technologies and scientific knowledge of vegetable crops cultivation mainly through their own observation of crops so that they can modify these technologies they have acquired and extend them to the respective country.
- MAIN FEATURES OF CURRICULUM** This course consists of lectures, experiments, practices and observations in study tours, on major vegetable crops in Japan. The emphasis is put on experiments and practices in the field and laboratory in this course. The main items are: (1) to acquire and improve the comprehensive knowledge and hands-on technology of major vegetable crops production with the scientific background such as plant physiology, soil analysis & fertilization and plant production (2) to understand the outline of agricultural extension service system in Japan (3) to obtain the fundamental knowledge of agricultural management such as vegetable marketing and household management.
- QUALIFICATION OF APPLICANT** (1) presently engaged in vegetable crops production, in the field of research, extension, education (2) university graduate with the occupational experience of more than three years in their specialities (3) over 25 and under 40 years of age
- TRAINING INSTITUTIONS** Tsukuba International Centre (TBIC), JICA

PLANT GENETIC RESOURCES

May 4, '98 - Oct. 30, '98, 6 participants

植物遺伝資源

J-98-00275

- PURPOSE** This course is designed to contribute to upgrading knowledge and skill of the junior researchers in the field of plant genetic resources, so as to train participants to be capable of playing important roles in collection and preservation of plant genetic resources in their own countries.
- MAIN FEATURES OF CURRICULUM** This course consists of common subjects for all participants and individual training (5 months) in the laboratory. Each participant is to take one of the following subjects for their individual research; (1) Genetic diversity of PGR based on DNA and protein analysis (2) Understanding population genetic diversity of crop relatives in situ (3) Wild and weedy crop gene pools and their relationship to the cultigen (4) Evaluation of plant germplasms by isozyme analysis (5) Evaluation of genetic resources in breeding for quality improvement (6) Application of molecular techniques for plant breeding (7) Detection and classification of seed-borne microorganisms (8) Genebank management and operations
- QUALIFICATION OF APPLICANT** (1) university graduate or equivalent non Ph. D. holder (2) presently engaged in research work in the field of plant genetic resources with more than three years' experience (3) over 25 and under 35 years of age
- TRAINING INSTITUTIONS** (1) Tsukuba International Centre (TBIC), JICA (2) National Institute of Agrobiological Resources (NIAR)
- REMARKS** (1) A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks (50 hours).

RICE RESEARCH TECHNIQUES

Feb. 8, '99 - Nov. 13, '99, 6 participants

稲研究

J-98-00291

- 1. PURPOSE** The course is designed to introduce useful knowledge and new techniques in the field of rice to the participants and to enable them master research methods.
- 2. MAIN FEATURES OF CURRICULUM** This course consists of three major components - lecture, experiment and field practice, and study tour. Knowledge and techniques of rice cultivation and method of research work are obtained. Above all, individual experiments are regarded as the utmost importance.
- 3. QUALIFICATION OF APPLICANT** (1) presently engaged in the research work or education in the field of rice (2) university graduate or equivalent with occupational experience of more than three years in their specialities (3) between 25 and 37 years of age, and non Ph. D. holder
- 4. TRAINING INSTITUTIONS** Tsukuba International Centre (TBIC), JICA
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for three weeks (50 hours).

VEGETABLE SEED PRODUCTION

Feb. 8, '99 - Nov. 20, '99, 9 participants

野菜採種

J-98-00292

- 1. PURPOSE** The purpose of this course is to bring up agricultural engineers on vegetable seed production having a broad viewpoint and scientific knowledge both in theory and technique, through lectures on specialized subjects, experiments and practices on major vegetables and various study tours.
- 2. MAIN FEATURES OF CURRICULUM** This course consists of lectures, experiments, practices and observations in study tours, on major vegetable crops in Japan. The emphasis is put on experiments and practices in the field and laboratory. In addition, individual experiments will be conducted by the participants. The main themes are: (1) seed production method of major vegetable crops (2) seed technology on sorting, drying, storage and germinating of vegetable seeds (3) applicable method of varietal improvement of major vegetable crops
- 3. QUALIFICATION OF APPLICANT** (1) presently engaged in vegetable seed growing, seed technology or varietal improvement (2) university graduate with occupational experience of more than three years in their field of speciality (3) over 27 and under 37 years of age
- 4. TRAINING INSTITUTIONS** Tsukuba International Centre (TBIC), JICA
- 5. REMARKS** An intensive Japanese language course will be conducted prior to the technical training for two weeks (50 hours).

SUGAR CANE RESEARCH

not executed in FY 98

サトウキビ研究

- 1. PURPOSE** The purpose of this course is to introduce the participants to extensive knowledge and techniques necessary for improving the productivity of sugar cane through lectures, experiments, practices and observation tours.
- 2. MAIN FEATURES OF CURRICULUM** This course consists of common subjects for all participants and individual work in the laboratory and field. Each participant is to take one of the following subjects for their individual work. (1) sugar cane agronomy (2) soil and fertilizer (3) plant biotechnology
- 3. QUALIFICATION OF APPLICANT** (1) presently engaged in research work or extension service in the field of sugar cane cultivation (2) university graduate or equivalent (3) under 35 years of age
- 4. TRAINING INSTITUTIONS** (1) Okinawa International Centre (OIC), JICA (2) Okinawa Prefectural Agricultural Experiment Station
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for eight weeks.
- 6. OTHER** This course is conducted every other year in principal. This year (in Japanese Fiscal Year 1998), it is not to be conducted.

EFFECTIVE UTILIZATION OF TROPICAL AGRICULTURE AND FORESTRY RESOURCES

Apr. 16, '98 - Nov. 23, '98, 5 participants

熱帯農林資源の有効利用

J-98-00326

- 1. PURPOSE** The purpose of the course is to introduce participants to the concept, research methodologies and techniques concerning cultivation system of tropical agricultural production and effective production and utilization of biological resources in the tropics.
- 2. MAIN FEATURES OF CURRICULUM** The course consists of lectures, discussions, indoor experiment, field practices, and observation tours. Participants will be given a series of lectures on agriculture and forestry in Japan, resource plants in the tropics, agricultural statistics, crop agronomy, and other general subjects before proceeding to subcourses of their own choice and to the optional programs for more detailed study. The subcourses offered for the current fiscal year are: (1) livestock production covering animal husbandry, animal nutrition, animal environment, and other subjects pertaining to the production, care, and marketing of livestock; (2) forestry including, among other subjects, forest management and engineering, stand structure and mensuration, remote sensing, and silvicultural operation; and (3) agricultural science with emphasis on crop agronomy, soilless cultivation, protected cultivation, tissue culture, and plant virus diseases.
- 3. QUALIFICATION OF APPLICANT** (1) have more than three years' of laboratory research experience (2) presently engaged in research work (3) university graduate or equivalent (4) under 35 years of age
- 4. TRAINING INSTITUTIONS** (1) Okinawa International Centre (OIC), JICA (2) College of Agriculture, University of the Ryukyus
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for six weeks (130 hours).

WOMEN LEADERS OF FARM HOUSEHOLD DEVELOPMENT

Aug. 11, '98 - Oct. 24, '98, 12 participants

農家生活水準向上女性指導者

J-98-00406

- PURPOSE** The purpose of the course is to provide knowledge and techniques related to the improvement of farm household lifestyles, and also to teach knowledge and techniques necessary for rural women to develop their ability to utilize regional resources, such as agricultural products, etc.
- MAIN FEATURES OF CURRICULUM** This course includes a homestay program at Japanese families in addition to common forms of training such as lectures and practices. The course mainly covers the following themes. (1) rural development policy (2) the methods and activities for improving living standard of farm household (3) human resources development
- QUALIFICATION OF APPLICANT** (1) engaged in the improvement of rural living standards by developing women's abilities through planning and execution of instruction and training for persons such as rural women, agricultural extension officials and/or home living improvement extension officials in agricultural departments (2) female under 45 years of age
- TRAINING INSTITUTIONS** (1) Tsukuba International Centre (TBIC), JICA (2) Women and Life Division, Agricultural Production Bureau, Ministry of Agriculture, Forestry and Fisheries (3) Rural Women Empowerment and Life Improvement Association
- REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for one week (25 hours).

PLANT QUARANTINE (DISINFESTATION OF FRUIT FLIES)

Apr. 16, '98 - Sep. 12, '98, 5 participants

植物検疫(ミバエ類殺虫技術)

J-98-00407

- PURPOSE** The course is designed to introduce the advanced technique required for disinfestation of fruit flies to the participants who are engaged in plant quarantine. It is also hoped that this course will ultimately contribute to the promotion of fruit and vegetable exports. The method of fruits fly eradication and the applicability of the method in each country will be also introduced and examined in the course.
- MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on lectures, workshop practice and field trips. The main themes are: (1) plant quarantine in Japan (2) morphology and taxonomy of fruit flies (3) physiology and ecology of fruit flies (4) artificial rearing of fruit flies (5) disinfestation method of fruit flies (outline) (6) disinfestation test by vapor heat treatment and cold treatment (7) injury test of fruit by vapor heat treatment and cold treatment (8) eradication of fruit flies
- QUALIFICATION OF APPLICANT** (1) university graduate or equivalent (2) having experience in plant quarantine works and having sufficient knowledge about pests such as fruit flies (3) being presently engaged in the disinfestation programme of fruit flies or will be engaged in it as a technical expert (4) being not exceeding 41 years of age
- TRAINING INSTITUTIONS** (1) Okinawa International Centre (OIC), JICA (2) Naha Plant Protection Station, Ministry of Agriculture, forestry and Fisheries (3) Fruit-fly Eradication Project Office, Okinawa Prefectural Government
- REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for six weeks (150 hours).

SOIL ANALYSIS AND IMPROVEMENT

May. 18, '98 - Aug. 22, '98, 7 participants

土壌分析改良

J-98-00408

- PURPOSE** The course is designed for specialists and technicians of soil analysis to be leaders in their fields by providing basic and practical knowledge about the technique essential to strengthening soil analysis and soil-improvement technique for maintaining higher agricultural food production, and to contribute to international relationship and the promotion of science.
- MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on introduction of Japanese experience and basic theories of soil analysis and improvement including laboratory experiments by participants. (1) general methods of soil analysis and improvement (2) advanced technique of soil analysis using optical instruments (3) methods of soil improvement based on organic and inorganic fertilizers (4) systems of soil improvement using computers
- QUALIFICATION OF APPLICANT** (1) presently engaged in soil analysis or have experience in soil improvement (soil analysis includes fertilizer, water quality or plant nutrition) (2) neither expert nor beginner in the field of soil analysis, and have at least two-years experience in this field (3) over 25 and under 40 years of age
- TRAINING INSTITUTIONS** (1) Hokkaido International Centre, Obihiro (HICO), JICA (2) Obihiro River Sewerage Treatment Plant (3) Northern Regions Center

AGRICULTURAL AND RURAL DEVELOPMENT WITH ENVIRONMENTAL CONSERVATION

Sep. 16, '98 - Dec. 3, '98, 15 participants

農業・農村開発環境保全

J-98-00474

- PURPOSE** The purpose of the training course is to provide improvement of planning and implementation techniques of engineers for agricultural and rural development projects mainly composed of irrigation and drainage, and agricultural land development. This training course is the general course that focuses on the introduction of agricultural and rural development under the consideration with environmental aspects.
- MAIN FEATURES OF CURRICULUM** This course mainly covers the following themes. (1) environmental considerations in survey, planning, design and implementation of agricultural and rural development projects (2) conservation technology for agricultural and rural development (3) framework of agricultural and rural development projects and environmental management and policies in Japan
- QUALIFICATION OF APPLICANT** (1) presently engaged in agricultural engineering (irrigation and drainage or rural development of agriculture) and have more than seven years of occupational experience in the field of the irrigation and drainage or rural development of agriculture (2) under 45 years of age (3) university graduate or equivalent
- TRAINING INSTITUTIONS** (1) Tsukuba International Centre (TBIC), JICA (2) Japanese Institute of Irrigation and Drainage (JIID) (3) Agricultural Structure Improvement Bureau, Ministry of Agriculture, Forestry and Fisheries

DISTRIBUTION OF FRESH FRUITS AND VEGETABLES

Aug. 31, '98 - Nov. 11, '98, 7 participants

青果物流通

J-98-00484

- PURPOSE** To contribute to the modernization of the fresh food distribution in participating countries where various deteriorations of products occur due to inefficiency of distribution system, participants will study the distribution from producing districts to retail market mainly focusing on the function of wholesale market that takes an important role to keep stable supply and to stabilize price of fresh fruits and vegetables.
- MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on introduction of Japanese experience and basic theories of distribution of fresh fruits and vegetables. The main themes are: (1) lectures (a) wholesale market (b) producing district (c) retail (d) consumer (2) practical training (a) wholesale market (3) field training (a) retail market and large scale retail store (b) producing districts
- QUALIFICATION OF APPLICANT** (1) administrator in charge of implementation of modernization measures for fresh food distribution or wholesale market, with practical experience of at least five years (2) under 40 years of age
- TRAINING INSTITUTIONS** (1) Osaka International Centre (OSIC), JICA (2) Osaka Municipal Central Wholesale Market
- REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks.

INTEGRATED PEST MANAGEMENT FOR PLANT PROTECTION

Jun. 1, '98 - Sep. 13, '98, 7 participants

植物保護のための総合防除

J-98-00503

- PURPOSE** The course is designed to upgrade knowledge and skill of the participants in the field of plant protection, so as to train technical officials capable of playing practical roles in this fields.
- MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on introduction of comprehensive knowledge on the following subjects through lecture, practice and field trip. (1) characteristics of host plants, pest and pathogen, environmental factors and the mutual relationships between the three (2) integrated pest management (3) individual studies: laboratory of plant pathology, entomology, genetics, agrochemical science (4) group studies: transplanting
- QUALIFICATION OF APPLICANT** (1) technical official presently in charge of plant protection in government, local body or college with three years or more experience in this field, (2) university graduate (3) above 25 and under 35 years of age
- TRAINING INSTITUTIONS** (1) Hyogo International Centre (HIC), JICA (2) Department of Plant Protection, Faculty of Agriculture, Kobe University
- REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for about several days.

STATISTICAL INFORMATION SYSTEM FOR AGRICULTURE

Jul. 7, '98 - Sep. 20, '98, 8 participants

農業統計情報システム

J-98-00568

- PURPOSE** The purpose of the course is to provide information on systematized methodology by using the computer to be adopted for such statistical operation like survey design and compilation of statistical information on agriculture.
- MAIN FEATURES OF CURRICULUM** The following major subjects will be covered in the course. (1) agricultural statistics (a) role (b) contents and methodology (2) agricultural census (3) sample survey (a) theory and methods (b) design of annual sample survey (sample census) of agricultural holdings (c) design of basic survey of livestock (d) design of crop survey (area survey, production survey) (4) method of computer use (a) programming (b) personal computer operation (5) remote sensing technology
- QUALIFICATION OF APPLICANT** (1) government official engaged in planning and administration of agricultural statistics (exclude forestry and fishery statistics) (2) university graduate or equivalent (3) not more than 40 years of age
- TRAINING INSTITUTIONS** (1) Tsukuba International Centre (TBIC), JICA (2) Statistics and Information Department, Ministry of Agriculture, Forestry and Fisheries (MAFF) (3) National Federation of Statistics Association on Agriculture and Forestry

INTRODUCTORY GENE MANIPULATION FOR AGRICULTURE

Jul. 27, '98 - Dec. 13, '98, 8 participants

農業生産のための遺伝子操作技術

J-98-00576

- PURPOSE** In the Developing Countries, the application of biotechnological methods to the agricultural sector is expected to be a solution to the many problems currently faced in this area. Through lectures and laboratory practice, course participants will learn the basics of gene manipulation technique and study Agrobacterium-based technology for selective breeding of plant cells.
- MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on laboratory experiments. The main themes are: (1) culture of microorganisms (2) nucleic acid extraction and separation techniques (3) protein purification and antibody production (4) electrophoresis techniques of nucleic acid and proteins (5) transformation methods (6) DNA enzyme treatment techniques (7) detection and identification techniques for transformed products (8) DNA amplification by the PCR method (9) sequence analyses of nucleic acid and protein
- QUALIFICATION OF APPLICANT** (1) university graduate or equivalent (except who hold a Ph.D. in genetic engineering) (2) researchers engaged in the field of agricultural products, and employees of governmental organizations in agricultural research (3) have experience of the handling and culture of microorganisms (4) under 35 years of age
- TRAINING INSTITUTIONS** (1) Osaka International Centre (OSIC), JICA, (2) College of Agriculture, Osaka Prefecture University
- REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks.

IRRIGATION AND DRAINAGE II

Feb. 8, '99 - Nov. 20, '99, 11 participants

灌漑排水 II

J-98-00093

- PURPOSE** The purpose of this course is to introduce systematically scientific knowledge and technology of the irrigation and drainage schemes to irrigation and drainage engineers who are engaged in agricultural development works.
- MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on practices. The main practices are; (1) soil mechanics (2) hydraulics (3) concrete (4) irrigation water requirement (5) survey
- QUALIFICATION OF APPLICANT** (1) presently engaged in practical works in irrigation and drainage (2) university graduate or equivalent with occupational experience of more than five years in their field (3) between 25 and 35 years of age
- TRAINING INSTITUTIONS** Tsukuba International Centre (TBIC), JICA
- REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for three weeks (60 hours).

AGRICULTURAL LAND AND WATER RESOURCES DEVELOPMENT II

May 26, '98 - Jul. 19, '98, 15 participants

農地水資源開発 II

J-98-00159

- PURPOSE** The purposes of this course are to provide senior engineers in the field of agricultural land and water resources development with the opportunity to learn about advanced technology in Japan and to increase their capability to make plans for agricultural and rural development projects (including planning, designing, and execution).
- MAIN FEATURES OF CURRICULUM** This course covers the following themes. (1) concept and ideas of agricultural land and water resources development (2) engineering aspects of agricultural land and water resources development (3) agricultural and rural development projects (a) method of planning and implementation (b) design criteria and standard for irrigation and drainage facilities (4) current situation and prospect of agricultural land and water resources development in the world (5) utilization of computer technology for agricultural land and water resources development
- QUALIFICATION OF APPLICANT** (1) presently engaged either in the task of agricultural land and water resources development or irrigation and drainage and have more than ten years of occupational experience in this field (2) under 45 years of age (3) university graduate or equivalent
- TRAINING INSTITUTIONS** (1) Tsukuba International Centre (TBIC), JICA (2) The Japanese Institute of Irrigation and Drainage (JIID) (3) Agricultural Structure Improvement Bureau, Ministry of Agriculture, Forestry and Fisheries

IRRIGATION WATER MANAGEMENT

May 25, '98 - Nov. 20, '98, 9 participants

水管理

J-98-00348

- PURPOSE** The purpose of this course is to enhance the technology and knowledge for design and planning of hydraulic facilities, and to introduce efficient water management technology of main canals through hydraulic analysis to irrigation engineers who are engaged in water management works of irrigation and drainage projects.
- MAIN FEATURES OF CURRICULUM** This course covers the following technology. (1) facilities design technology (2) irrigation and drainage technology (3) water management technology (4) hydraulic analysis and (5) related subjects. Participants will learn and acquire the theory, application and, comprehensive knowledge and technology through lectures, experiments and practices, study tours and observations of irrigation and drainage project sites.
- QUALIFICATION OF APPLICANT** (1) university graduate or equivalent with occupational experience of more than five years in their field (2) presently engaged in practical work in water management (3) between 25 and 35 years of age.
- TRAINING INSTITUTIONS** Tsukuba International Centre (TBIC), JICA
- REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for 30 hours.

FARM MECHANIZATION II

Feb. 15, '99 - Nov. 13, '99, 10 participants

農業機械化 II

J-98-00050

- PURPOSE** The purpose of the course is to systematically introduce the scientific knowledge and techniques on farm mechanization such as effective selection, introduction and utilization of farm machinery, and systematic mechanized farming in the extension field.
- MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on the field and laboratory experiments on farm mechanization for paddy cultivation and for upland crop cultivation. It mainly covers: (1) field performance tests of farm machinery and analysis of the result before its introduction to their countries (2) mechanization planning and its evaluation process, and applicable knowledge concerned with farm mechanization system (3) accurate and safety utilization method of measuring instruments and tools (4) experiment method such as field performance test of farm machinery under the existing conditions at the necessary level (5) technical know-how on trouble shooting and minor repair of farm use engine (6) safety operation and maintenance technique of farm machinery (7) study on personal-computer use for data analysis and report making of experiments and farm-household practice.
- QUALIFICATION OF APPLICANT** (1) university graduate or equivalent (2) agricultural engineer and/or agronomist having more than three years experience on farm mechanization (3) between 25 and 42 years of age.
- TRAINING INSTITUTIONS** Tsukuba International Centre (TBIC), JICA
- REMARKS** During training period, (1) the participants are to join and some have a presentation of technical report after screening the annual meeting of Japanese Society of Agricultural Machinery (2) farm-household practice is to be organized at a Japanese farm house.

FARM MACHINERY DESIGN

Feb. 8, '99 - Oct. 23, '99, 10 participants

農業機械設計

J-98-00276

- 1. PURPOSE** The purpose of the course is to introduce scientific knowledge and techniques on designing, trial making and performance test of farm machinery, mainly for crop production, which is adoptable to the participants' country conditions.
- 2. MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on the actual designing and trial making of farm machinery and performance test of trial-made machinery. The main themes are: (1) mechanism and performance of farm machinery and farm energy such as windmill and solar-dryer (2) designing methodology, trial-making process and testing methodology of trial-made farm machinery (3) accurate and safety utilization method of measuring instruments, tools and applicable utilization of personal-computer (4) analyzing and processing methodology of metallic and other materials concerned of manufacturing farm machinery (5) report making and presentation for symposium (6) study tour to university, research institutes and farm machinery manufacturing companies (7) Japanese farm house and manufacturing factory practice
- 3. QUALIFICATION OF APPLICANT** (1) university graduate from faculty of agricultural engineering or mechanical engineering (2) design engineer or research engineer with experience of more than three years in the design, research or development on farm machinery (3) between 27 and 42 years of age
- 4. TRAINING INSTITUTIONS** Tsukuba International Centre (TBIC), JICA.
- 5. REMARKS** During the training period the participants are to join and some have a presentation of technical report after screening at the annual meeting of Japanese Society of Agricultural Machinery.

AGRICULTURAL MACHINERY MANAGEMENT

Apr. 27, '98 - Nov. 1, '98, 10 participants

農業機械管理

J-98-00433

- 1. PURPOSE** This course is designed for leading agricultural engineers in the field of agricultural machinery management, as an opportunity to acquire the following knowledge and skills: (1) better understanding of agricultural machinery performance (2) selection of agricultural machinery appropriate to the operation area, soil quality and variety of crops (3) improvement of managerial ability, i. e. cost analysis, etc. (4) practical knowledge on agricultural machinery maintenance and repair (5) ability to instruct others in workshop management (Notice: the agricultural machinery in this course is especially for rice cultivation.)
- 2. MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on the workshop practice and lectures at agricultural machinery companies. The main themes are: (1) principal agricultural machinery (a) fundamentals of mechanical engineering (b) principles and structure of agricultural components (c) disassembling, reassembling and maintenance (d) field operation (2) agricultural machinery management (a) farm mechanization planning, machine selection, cost analysis, mechanized farming system, working management, etc.
- 3. QUALIFICATION OF APPLICANT** (1) leading agricultural engineer with at least 3 years experience in the field of agricultural machinery management and/or instruction in their respective organizations (2) over 30 and under 40 years of age (3) university graduate or equivalent
- 4. TRAINING INSTITUTIONS** (1) Osaka International Centre (OSIC), JICA (2) Kyoto University (3) some Japanese agricultural machinery companies
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for one week.

FARM MACHINERY TESTING

Mar. 23, '99 - Jun. 27, '99, 10 participants

農業機械評価試験

J-98-00446

- 1. PURPOSE** The purpose of this course is to systematically introduce the knowledge and techniques required for the testing and evaluation of agricultural machinery.
- 2. MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on the actual testing and evaluating methodology of agricultural machinery. The actual testing practices are conducted under the authorized testing cord. The main themes are: (1) testing and evaluation of agricultural machines to determine the performance characteristics, rate of work, durability, safety, ease of operation (2) testing and evaluation method in laboratory and field (3) accurate utilization of testing and measuring instruments (4) data acquisition, data processing and data analyzing by micro-computer (5) agricultural machinery testing system and administration (6) agricultural mechanization features (7) study tour to university, research institutes and farm machinery manufacturing companies.
- 3. QUALIFICATION OF APPLICANT** (1) university graduate in agricultural engineering or mechanical engineering (2) test engineer or qualified engineer in testing of agricultural machinery with experience of more than three years (3) between 25 and 50 years of age
- 4. TRAINING INSTITUTIONS** (1) Tsukuba International Centre (TBIC), JICA (2) Bio-oriented Technology Research Advancement Institution (BRAIN), Institute of Agricultural Machinery (IAM)
- 5. REMARKS** (1) A compulsory intensive Japanese language will be conducted prior to the technical training for 10 days (40 hours). (2) During training period the participants are to join the annual meeting of Japanese Society of Agricultural Machinery.

POST-HARVEST RICE PROCESSING

Aug. 27, '98 - Nov. 15, '98, 10 participants

米の収穫後処理技術

J-98-00514

- 1. PURPOSE** The purpose of the course is to contribute to the planning, guidance and extension of technical improvement in this field in the government and public organizations of each country. It also aims to contribute to the improvement in effective processing technology and to prevent quantitative and qualitative losses by giving participants the knowledge and information on post-harvest rice processing in Japan, namely harvesting, drying, husking, grading, inspection, storage, milling, utilization of by-products, etc.
- 2. MAIN FEATURES OF CURRICULUM** The following major subjects will be covered in the course. (1) rice production and marketing (2) characteristics of rice (indica and japonica subspecies) (3) harvesting, threshing and drying - machinery operation (4) storage - facility control and management (5) milling - machinery/equipment operation (6) quality control and inspection - system and testing equipment (7) utilization of by-products (husks, bran and brokens)
- 3. QUALIFICATION OF APPLICANT** (1) senior technical administrator in government or public organizations engaged in planning and promoting the improvement of all post-harvest rice processes (not be researcher, instructor or professor at college or university) (2) under 45 years of age (3) university graduate or equivalent
- 4. TRAINING INSTITUTIONS** (1) Tsukuba International Centre (TBIC), JICA (2) Japan Grain Inspection Association (3) Ministry of Agriculture, Forestry and Fisheries

POULTRY PRODUCTION AND BREEDING TECHNOLOGY

Aug. 10, '98 - Dec. 3, '98, 9 participants

鶏育種・生産技術

J-98-00061

- PURPOSE** Although the course is named "Poultry Production and Breeding Technology", it should be noted that in Japan, "poultry industry" is almost a synonym of "chicken industry". Thus the course is designed to provide the participants with knowledge and technology on chicken. The purpose of the course is to transfer basic and practical knowledge and technique on chicken to the personnel engaged in the chicken industry in their own countries. It should be particularly emphasized that the course will train practical technicians engaged in directly instructing farmers, not researchers or administrators.
- MAIN FEATURES OF CURRICULUM** In this Course, participants are expected to be able to acquire knowledge and technique in the following items. (1) feeding and management (2) breeding (3) other peripheral techniques of production and breeding
- QUALIFICATION OF APPLICANT** (1) be nominated by their government (2) presently in charge of poultry relating activities, with more than three years' experience in this field (3) university graduate or equivalent academic background (4) under 40 years of age (5) proficient in spoken and written English be nominated by their government (6) be in good health to undergo the training course. Pregnancy is regarded as a disqualifying condition (7) not be serving in the military
- TRAINING INSTITUTIONS** (1) Nihonmatsu Training Centre, JICA (2) National Livestock Breeding Centre, Ministry of Agriculture, Forestry and Fisheries
- REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for 4 weeks.

BREEDING AND ARTIFICIAL INSEMINATION IN CATTLE

May 5, '98 - Aug. 23, '98, 8 participants

牛育種・人工授精

J-98-00494

- PURPOSE** The purpose of this course is to provide participants with basic knowledge and practical techniques coupled with the latest information on cattle breeding, knowhow of A. I. (artificial insemination) and its administration system and thus to assist them in designing their own systems in their respective countries.
- MAIN FEATURES OF CURRICULUM** This course consists of common subjects for all participants and research work at laboratory and field. All participants are to take the following subjects. (1) general aspects of livestock industries (2) cattle breeding (3) artificial insemination (4) extension of artificial insemination (5) deep frozen semen (6) reproductive disorder (7) feeding and management
- QUALIFICATION OF APPLICANT** (1) be in nominated by their government (2) university graduate or equivalent academic background (3) presently engaged in livestock administration, holding veterinary license or artificial inseminator's license (4) under 40 years of age (5) will be engaged in systematic development and promotion after absorbed from this training (6) proficient in spoken and written English (7) be in good health, both physically and mentally, to undergo the training; (As the training for long period may give risks to the pregnant body, pregnancy is regarded as a disqualifying condition for participation to this training course.) (8) not be serving in the military
- TRAINING INSTITUTIONS** (1) Nihonmatsu Training Centre, JICA (2) National Livestock Breeding Center, Ministry of Agriculture, Forestry and Fisheries
- REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for 4 weeks.

SWINE PRODUCTION AND BREEDING TECHNOLOGY

Jan. 4, '99 - Apr. 29, '99, 6 participants

豚育種・生産技術

J-98-00588

- PURPOSE** The purpose of the course is to transfer the latest technology and knowledge of swine production and breeding technology in Japan to participating countries facing such necessities. It is designed to train leading technologists who can promote swine breeding, and ultimately contribute to the progress of animal industry.
- MAIN FEATURES OF CURRICULUM** The course covers the whole range of swine breeding technology. The subjects are as follows: (1) new technology of swine breeding (2) feeding and management technology (3) disease and sanitary measures (4) artificial insemination technology using frozen semen (5) embryo transfer technology (6) meat analysis by scanning scope
- QUALIFICATION OF APPLICANT** (1) be nominated by their government (2) university graduate or equivalent academic background (3) have more than three years' occupational experience in the field of swine breeding at government institutes or universities (4) under 40 years of age (5) proficient in spoken and written English (6) be in good health to undergo the training course. Pregnancy is regarded as a disqualifying condition (7) not be serving in the military
- TRAINING INSTITUTIONS** (1) Nihonmatsu Training Centre, JICA (2) National Livestock Breeding Center, Ministry of Agriculture, Forestry and Fisheries (MAFF)
- REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for 4 weeks.

EMBRYO TRANSFER TECHNOLOGY FOR CATTLE

Aug. 10, '98 - Dec. 3, '98, 8 participants

牛受精卵移植技術

J-98-00582

- PURPOSE** The purpose of the course is to provide the latest ET (embryo transfer) technique in Japan for livestock breeding personnel in countries faced with such necessities, and ultimately to contribute to the progress of animal industry by the application and improvement of the techniques under their respective countries' condition. The course provides basic theory and practical use of ET as well as its administration.
- MAIN FEATURES OF CURRICULUM** The course will consist mainly of lectures and practical training, in which the Centre staff and visiting professionals will give expertise and instruction on the respective subjects. This will be supplemented by observation trips to the related agencies and institutions. The subjects are as follows: (1) general aspects of livestock industries (2) cattle breeding and reproduction (3) embryo transfer
- QUALIFICATION OF APPLICANT** (1) be nominated by their government (2) hold veterinarian's license, or artificial inseminator's license, and have sufficient experience and knowledge about artificial insemination technique (3) university graduate or equivalent academic background (4) over 27 and under 40 years of age, in principle (5) proficient in spoken and written English In this course, a non-surgical method is applied for practice drills in recovery and transplantation of embryo. This method requires applicants to have enough knowledge of, and have at least three years practical experience in AI or ET. (6) be in good health to undergo the training course. Pregnancy is regarded as a disqualifying condition (7) not be serving in the military
- TRAINING INSTITUTIONS** (1) Nihonmatsu Training Centre, JICA (2) National Livestock Breeding Center, Ministry of Agriculture, Forestry and Fisheries
- REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for 4 weeks.

DAIRY FARMING AND RELATED INDUSTRIES

Aug. 17, '98 - Nov. 6, '98, 7 participants

酪農振興・検査技術

J-98-00334

- 1. PURPOSE** The course is designed to train dairy specialists and technicians to be leaders in their fields, by providing basic, practical knowledge about the technique essential to strengthening dairy farming such as livestock health inspection techniques, sanitary methods and inspection techniques for maintaining meat and milk quality, etc., and to contribute to international relationships and the promotion of science.
- 2. MAIN FEATURES OF CURRICULUM** This course consists of common subjects for all participants and elective specialized subjects. The followings are main items in common subjects. (1) feeding, management and reproduction in dairy cattle (2) diseases and their prevention in dairy cattle (3) improvement of sanitary conditions for housing and equipment (4) processing of meat and dairy products, and inspection techniques. Participants will be divided into two groups to cover one of the following subjects: (1) quality tests and sanitary inspection techniques in meat and milk products (2) animal husbandry techniques
- 3. QUALIFICATION OF APPLICANT** (1) engaged in fields related to animal husbandry (2) university graduate or equivalent (3) over 25 and under 40 years of age
- 4. TRAINING INSTITUTIONS** (1) Hokkaido International Centre, Obihiro (HICO), JICA (2) Obihiro University of Agriculture and Veterinary Medicine

FOREST SOILS

Jul. 23, '98 - Nov. 30, '98, 6 participants

森林土壌

J-98-00335

- 1. PURPOSE** The course is designed to introduce the knowledge on forest soils and the method of the forest soil survey in Japan to those who are presently engaged in practice and research work in forestry in governmental organizations.
- 2. MAIN FEATURES OF CURRICULUM** In this course, the following are the major subjects. (1) forest soil science (a) general description of forest soils (b) formulation, classification and distribution of forest soils (c) vegetation, productivity and water conservation with forest soils (d) soils and fertilizers for forestry nursery (e) forest soils in Okinawa (2) investigation into forest soils (a) methods of forest soil investigations (sampling and analysis) (b) soil mapping and utilization on forest maps (c) field research and investigations
- 3. QUALIFICATION OF APPLICANT** (1) university graduate or equivalent (2) having more than five years of experience in the field of forest soil research (3) presently serving at forestry research organizations or universities (4) under 40 years of age
- 4. TRAINING INSTITUTIONS** (1) Okinawa International Centre (OIC), JICA (2) Japan Forest Technical Association (3) College of Agriculture, University of the Ryukyus
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks (50 hours).

FOREST MANAGEMENT AND PLANNING

Aug. 10, '98 - Nov. 8, '98, 15 participants

森林管理計画

J-98-00445

- 1. PURPOSE** The purpose of this course is to provide participants with an opportunity of; (1) studying the technology, knowledge on the various land survey which form the basis of the Japanese system of forest management and planning (2) practicing forest management planning so that they may contribute to the conservation and development of forest resources in their respective countries.
- 2. MAIN FEATURES OF CURRICULUM** This course is designed to balance lecture and practice, and the main themes are: (1) forest management in Japan (2) methods of forest management planning (3) rural development and forest policy (4) final forum
- 3. QUALIFICATION OF APPLICANT** (1) technical staff in charge of forest management in the governmental organizations and have more than five years of experience (2) university graduate or equivalent (3) not more than 45 years of age
- 4. TRAINING INSTITUTIONS** (1) Hachioji International Training Centre (HITC), JICA (2) Forest Training Institute, Forestry Agency
- 5. REMARKS** A compulsory intensive Japanese language will be conducted prior to the technical training for two weeks (50 hours).

FOREST RESEARCH

Aug. 17, '98 - Nov. 21, '98, 5 participants

森林研究

J-98-00501

- 1. PURPOSE** The course is designed to contribute to upgrading knowledge and skill of the participants in the field of forest environment and forest biology research, so as to train researchers capable of playing important roles in this field.
- 2. MAIN FEATURES OF CURRICULUM** This course is composed of the three sub-courses; "Forest", "Forestry" and "Forest Products". Each sub-course is conducted every three years. This year (Japanese Fiscal Year 1998), the sub-course on "Forest" will be conducted. This course consists of common subjects for all participants (about one week) and individual research work in the laboratory (about 2 months). Each participant is to take one of the 43 subjects in the field of (1) Plant ecology (2) Forest site (3) Soil and water conservation (4) Environment conservation (5) Forest microbiology (6) Forest Zoology (7) Pest and wildlife management for their individual research.
- 3. QUALIFICATION OF APPLICANT** (1) university/college graduate or equivalent with occupational experience of more than five years in the field of forest research (2) research scientist of forest research organizations or universities (3) under 40 years of age. Note: This training course is not designed for administrators, but for research scientists.
- 4. TRAINING INSTITUTIONS** (1) Tsukuba International Centre (TBIC), JICA (2) Forestry and Forest Products Research Institute, Ministry of Agriculture, Forestry and Fisheries
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks (50 hours).

WOOD BASED MATERIALS APPLICATION TECHNOLOGY

Aug. 11, '98 - Nov. 30, '98, 7 participants

木質材料高度利用技術

J-98-00386

- PURPOSE** To upgrade knowledge in the field of wood industry, so as to enable them to contribute to the development of wood technology and effective utilization of wood resources in their own countries.
- MAIN FEATURES OF CURRICULUM** The emphasis is put on lectures and practical training. The main themes are: (1) Wood Resources and Their Utilization; utilization of wood resources and materials, distribution of wood materials, Japanese agriculture standard for wood products, etc. (2) Production Technology of Improved Woods; improved wood, sawing method, plywood, laminated plywood, WPC, utilization of waste or non used materials, etc. (3) Wood Based Materials and Surface Finishing Technology; secondary processing, control of moisture content in wood painting, anti-fungi treatment, drying method, forming process etc. (4) Wood Based Materials and Adhesive Agents; jointing and adhesion, adhesives, furniture manufacturing, inspection of strength for wood materials etc. (5) Research and Development for Wood Based Materials Processing; research on wood materials, antipollution countermeasure etc.
- QUALIFICATION OF APPLICANT** (1) university graduate or equivalent (2) occupational experience of more than five years in the field of wood industry, belonging to a governmental organization (3) under 40 years of age
- TRAINING INSTITUTIONS** (1) Nagoya International Training Centre (NITC), JICA (2) Nagoya Regional Forest Office, Forestry Agency.
- REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks (50 hours).

FISHING GEAR DEVELOPMENT AND DESIGN

Sep. 1, '98 - Dec. 6, '98, 7 participants

漁具開発設計

J-98-00215

- PURPOSE** The purpose of the course is to provide basic knowledge on methods on research and development for the improvement of existing fishing gear or introduction of new ones taking resource management into consideration.
- MAIN FEATURES OF CURRICULUM** This course will be delivered through a series of lectures, case studies and practical training. The key subjects are: (1) basic theory of fishing gear design and improvement (2) case studies of fishing gear development and improvement in Japan (3) evaluation of newly introduced fishing methods (4) model net making and experiment in a water tank
- QUALIFICATION OF APPLICANT** (1) university graduate or equivalent (2) more than three years' occupational experience in fishing gear and methods research and development (3) less than 40 years of age
- TRAINING INSTITUTIONS** Kanagawa International Fisheries Training Centre (KIFTC), JICA
- REMARKS** A compulsory intensive Japanese language course (total 40 hours) will be conducted after lecture in the evening.

GENERAL AQUACULTURE

May 5, '98 - Nov. 1, '98, 9 participants

養殖一般

J-98-00236

- PURPOSE** The course is designed to upgrade basic knowledge and technique of aquaculture for those who are involved in extension or research work. The training program is designed to cover various kinds of aquatic organisms, such as fin fish, molluscs, crustaceans and algae in not only seawater, but also in brackishwater and freshwater.
- MAIN FEATURES OF CURRICULUM** This course is designed to emphasize introduction of common practice of aquaculture in Japan and basic scientific theories of aquaculture and will be delivered through lectures, laboratory experiments and study tours. The main subjects are: (1) seed production (2) breed stock management (3) food development (4) pathology.
- QUALIFICATION OF APPLICANT** (1) person presently engaged in aquacultural extension or research work with more than two years' experience in this field (2) university graduate (3) under 35 years of age
- TRAINING INSTITUTIONS** Kanagawa International Fisheries Training Centre (KIFTC), JICA
- REMARKS** A two week compulsory intensive Japanese language course (total 50 hours) will be conducted prior to the technical training.

HULL AND ENGINE MAINTENANCE OF SMALL FISHING BOAT

Jan. 12, '99 - Jun. 27, '99, 7 participants

小型漁船の船体・機関保守

J-98-00277

- PURPOSE** The purpose of the course is to provide a series of practical training in maintenance and repair for hull and engine of fishing boat less than 50 G.T.. The course is designed for persons providing fishermen with training and technical service for maintenance and repair of hull and engine.
- MAIN FEATURES OF CURRICULUM** This course focuses on practical knowledge and techniques of maintenance and repair of small fishing boats, engines and other fishing equipment. The key subjects are: (1) diesel engines (2) outboard motors (3) refrigeration equipment (4) electrical equipment for marine use (5) P.R.P. for fishing boat hull.
- QUALIFICATION OF APPLICANT** (1) senior high school graduate or equivalent (2) more than three years' occupational experience in providing fishermen with training and technical service for maintenance and repair of small fishing boats (3) between 25 and 40 years of age
- TRAINING INSTITUTIONS** Kanagawa International Fisheries Training Centre (KIFTC), JICA
- REMARKS** A two week compulsory intensive Japanese language course (total 50 hours) will be conducted prior to practical training.

FISHERIES ORIENTED RESOURCE MANAGEMENT

May 5, '98 - Sep. 27, '98, 7 participants

資源管理型漁業

J-98-00336

- PURPOSE** The purpose of the course is to enable the participants who belong to fisheries research institutes (university) and fisheries offices to understand the basic theory and techniques for the fisheries oriented resource management. After this course, it is expected of them to plan a suitable system for the sustainable fishery resource exploitation in their respective countries.
- MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on understanding the idea of the fisheries oriented resource management, not on learning a certain specialized field or a technique in fisheries. It mainly covers: (1) theory of fisheries oriented resource management (2) method of researching marine ecosystem and aquatic community (3) method of preparing artificial reefs (4) method of seed stocking (5) making his/her own fisheries oriented resource management plan for his/her country
- QUALIFICATION OF APPLICANT** (1) university graduate or equivalent and be experienced in business over five years (2) presently engaged in either research or educational activity in fisheries (3) not more than 40 years old
- TRAINING INSTITUTIONS** (1) Shikoku Branch Office, JICA (2) Usa Marine Biological Institute, Kochi University

FISH PATHOLOGY AND ENVIRONMENTAL MANAGEMENT OF AQUACULTURE

Aug. 24, '98 - Nov. 29, '98, 5 participants

魚類防疫・環境管理

J-98-00351

- PURPOSE** This course is designed for those who belong to institutions of education and research, to understand the importance of environment control and practical techniques of preventing epizootics, which is important theme in aquaculture.
- MAIN FEATURES OF CURRICULUM** The emphasis is placed on the ecology of aquaculture, and the practical techniques for preventing epizootics in fish. The curriculum is composed of lecture and technical training. The subjects covered in the course are: (1) coastal environmental chemistry; (2) environmental microbiology; (3) planktonology; (4) fish pathology; (5) prevention of epizootics in fish.
- QUALIFICATION OF APPLICANT** (1) presently engaged in either in research or educational activities in aquaculture, with more than three years of occupational experience; (2) university graduate or equivalent; (3) less than 40 years of age.
- TRAINING INSTITUTIONS** (1) Kyushu International Centre (KIC), JICA (2) National Fisheries University, Ministry of Agriculture, Fisheries and Forestry
- REMARKS** (1) A compulsory 25-hour Japanese language course will be conducted prior to the technical training.

COASTAL FISHING TRAINING AND EXTENSION

Apr. 7, '98 - Sep. 6, '98, 6 participants

沿岸漁業訓練普及

J-98-00432

- PURPOSE** The course is designed for instructors and extension workers to upgrade their practical knowledge and techniques on various coastal fishing methods and their extension activities.
- MAIN FEATURES OF CURRICULUM** The course will be delivered through a series of lectures and observations of practical fishing operations. The key subjects are: (1) coastal fisheries in Japan (2) construction and operation of various fishing gear (theory and practice) (3) proper management of fishing grounds and fishery resources (4) proper use of fishing machines and auxiliary equipment (5) fisheries extension service and its examples.
- QUALIFICATION OF APPLICANT** (1) senior high school graduate or equivalent (2) more than three years' occupational experience in coastal fisheries (3) less than 45 years of age
- TRAINING INSTITUTIONS** Kanagawa International Fisheries Training Center (KIFTC), JICA
- REMARKS** A compulsory intensive Japanese language course (total 12 hours) will be conducted after lectures in the evening.

SEMINAR ON FISHERIES DEVELOPMENT PLANNING

Feb. 2, '99 - Mar. 28, '99, 7 participants

水産開発セミナー

J-98-00518

- PURPOSE** The seminar is designed to upgrade the planning capabilities of participants who are involved in fisheries development planning.
- MAIN FEATURES OF CURRICULUM** The seminar consists of general and special subjects. The program of general subjects is designed to cover critical aspects of fisheries development planning in developed and developing countries to ensure that participants are exposed to a wide spectrum of experiences and development strategies. The principal topics of general subjects are: (1) fisheries development and supporting systems in Japan (2) fisheries development strategies and project formulation (3) fish resource management-biology and economics (4) infrastructure development for fisheries (5) financial development for fisheries (6) Environmentally sound development planning (7) coastal zone management and fisheries development. The main topic of special subjects will be set each year. In Japanese Fiscal Year 1998, it is "Fisheries Education and Extension Service".
- QUALIFICATION OF APPLICANT** (1) director or government official at an equivalent level who is presently in charge of development planning in the fisheries sector and with more than five years' occupational experience (2) university graduate or equivalent (3) between 30 and 50 years of age
- TRAINING INSTITUTIONS** Kanagawa International Fisheries Training Centre (KIFTC), JICA

**FISHERIES MANAGEMENT AND COOPERATIVES
(INTENSIVE)**

Aug. 25, '98 - Dec. 20, '98, 8 participants

漁業協同組合(インテンシブ)

J-98-00520

- 1. PURPOSE** This course is designed to upgrade the administrative skills of personnel working in the following positions; government officers who are in charge of organizing fishermen's cooperatives or staffs of fishermen's cooperatives.
- 2. MAIN FEATURES OF CURRICULUM** The curriculum is composed of lectures on: (1) Fishermen's cooperatives, introduction of Japanese experiences (2) proper utilization of fish resources through fishermen's organizations (3) upgrading the living standard of coastal fishermen by fishermen's cooperatives, and (4) related subjects including fish trade and marketing, aquaculture development and post harvest technology. In addition, discussion meetings on these subjects and field trips are included in the program.
- 3. QUALIFICATION OF APPLICANT** (1) staff of fishermen's cooperative or an official of the government in related fields with more than three years' occupational experience (2) university graduate or equivalent (3) under 40 years of age
- 4. TRAINING INSTITUTIONS** Kanagawa International Fisheries Training Centre (KIFTC), JICA
- 5. REMARKS** A two week compulsory intensive Japanese language course (total 50 hours) will be conducted prior to practical training.

**HANDLING AND PROCESSING OF FISH
AND MARINE PRODUCTS**

Apr. 28, '98 - Aug. 23, '98, 6 participants

漁獲物処理

J-98-00515

- 1. PURPOSE** The purpose of the course is to provide practical knowledge required by the leading technical officials and researchers who are presently engaged in the technology development of fish handling and processing. The course is comprised of lectures, laboratory practices as well as demonstrations arranged by universities, governmental research institutes and private enterprises.
- 2. MAIN FEATURES OF CURRICULUM** This course will be delivered through a series of lectures, practical training and field trips. Participants will acquire knowledge and techniques on handling and processing of fish and marine products. The main lectures are: (1) various processing methods of fish and marine products (2) handling for freshness maintenance (3) improvement of processed products (4) basic quality control. Practical training includes drying, smoking, salting and canning products, material freshness and product quality, and methods of judging freshness.
- 3. QUALIFICATION OF APPLICANT** (1) person currently engaged in either production or research on handling and processing of fish and marine products and having more than three years' occupational experience in this field (2) university graduate or equivalent (3) between 25 and 40 years of age
- 4. TRAINING INSTITUTIONS** Kanagawa International Fisheries Training Centre (KIFTC), (JICA)
- 5. REMARKS** A two week compulsory intensive Japanese language course (total 50 hours) will be conducted prior to the technical training.

QUALITY ASSURANCE OF MARINE FOOD

Aug. 25, '98 - Dec. 20, '98, 6 participants

水産食品品質保証

J-98-00517

- 1. PURPOSE** The purpose of the course is to provide practical knowledge and techniques on quality management and inspection of marine food, so that the participants may contribute to the improvement of safety and quality of fishery products in their countries.
- 2. MAIN FEATURES OF CURRICULUM** This course will be delivered through a series of lectures, practical training in processing factories and inspection laboratories. Participants will acquire knowledge and techniques on inspecting safety of products and sanitary condition of processing facilities. The main subjects are: (1) introduction of various inspection methods of marine products (2) introduction of inspection methods of sanitary management, including HACCP (3) introduction of laws and ordinances of quality control of marine food in Japan. Practical training includes freshness testing of fish, quality assurance of canned fish and instrumental analysis of food quality.
- 3. QUALIFICATION OF APPLICANT** (1) person currently engaged in inspection of fish and marine products and having more than three years' occupational experience in this field (2) university graduate or equivalent (3) between 25 and 40 years of age
- 4. TRAINING INSTITUTIONS** Kanagawa International Fisheries Training Centre (KIFTC), JICA
- 5. REMARKS** (1) A two week compulsory intensive Japanese language course (total 50 hours) will be conducted prior to technical training.

COAL MINE SAFETY

Sep. 7, '98 - Dec. 6, '98, 9 participants

石炭鉱山保安

J-98-00269

- 1. PURPOSE** The course is designed to introduce practical technology and knowledge in the field of coal mine safety (mainly for underground mines) to participants, who are safety engineers at coal mines, mine safety officers or official field inspectors so that they can play important roles in their fields.
- 2. MAIN FEATURES OF CURRICULUM** This course consists of common subjects for all participants (about two and a half months) and individual study in the laboratory (about one week). The main subjects are as follows: (1) common subjects (lecture): (a) mining policy (b) mine safety policy (c) international cooperation of mine safety (d) inspection of underground appliances (e) prevention of underground labor accidents (f) accident analysis (g) underground work environment (h) ventilation (i) explosives and blasting (j) rock mechanics (k) gas outburst (l) explosion-proof appliances (m) measurement and countermeasures of dust (n) mine support (o) gas and coal dust explosions (p) static electricity (q) safety appliances (r) safety measurement (s) mine fire (2) subjects for individual study (one subject for each participant): (a) rock mechanics, AE measurement (b) mine ventilation (c) safety appliances (d) explosion proof instruments
- 3. QUALIFICATION OF APPLICANT** (1) presently engaged in the field of coal mine safety (2) university graduate or equivalent with basic knowledge of mine safety with occupational experience of more than three years (3) under 35 years of age
- 4. TRAINING INSTITUTIONS** (1) Tsukuba International Centre (TBIC), JICA (2) National Institute for Resources and Environment (NIRE), Agency of Industrial Science and Technology, Ministry of International Trade and Industry (3) Japan Coal Energy Center (JCOAL)
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for a week (20 hours).

RESEARCH AND DEVELOPMENT ON MATERIALS AND RESOURCES

Aug. 10, '98 - Jun. 6, '99, 5 participants

材料および資源に関する技術研究

J-98-00412

- 1. PURPOSE** The purpose of the course is to assist the participants in understanding the essential aspects of research and in cultivating a pioneer spirit of research through participation in the research themes with Tohoku National Industrial Research Institute (TNIRI) and discussion with TNIRI's researchers. TNIRI's researchers will help participants become technical experts and research planners who can carry out similar work by themselves so as to promote this field in their own countries. The purpose of this course is not to acquaint the participants with known technologies that can be immediately applied in their countries, but rather to assist the participants in mastering methods of research and planning with the objective of gaining greater technical knowledge.
- 2. MAIN FEATURES OF CURRICULUM** After the technical orientation, participants will pursue individual research work under a designated research subjects for about ten months. The following six groups in TNIRI will offer programs for the technical training. (1) separation and chemical analysis group (2) metal ion recognition group (3) electrochemical corrosion group (4) thermal science-design and analysis group (5) powder metallurgy group (6) super critical fluids technology group (7) utilization of clay group (8) metal injection molding group
- 3. QUALIFICATION OF APPLICANT** (1) university graduate in the field of chemical, mining, mechanical or other related technology with occupational experience of more than three years. Master's or doctoral degrees is preferable. (2) between 25 and 35 years of age
- 4. TRAINING INSTITUTIONS** (1) Tohoku Branch, JICA (2) Tohoku National Industrial Research Institute (TNIRI), Agency of Industrial Science and Technology, Ministry of International Trade and Industry.

SENIOR CLASS SEMINAR ON SMALL INDUSTRY DEVELOPMENT II

Jul. 6, '98 - Aug. 6, '98, 12 participants

中小工業開発セミナー II

J-98-00074

- 1. PURPOSE** To provide with some hints and ideas for formulating and implementing better development policies for small industry through review and comparison of policies taken in Japan and those of participating countries.
- 2. MAIN FEATURES OF CURRICULUM** Lecture, observation and discussion. The curriculum consists of four main parts as follows; (1) Orientation (lecture and observation); general environment for small industries (2) Japanese Case Study (lecture and observation); financing, tax and credit, management, technology, human resources (3) International Comparative Study (presentation and discussion); ancillarization, rural industrialization, distribution channel of merchandise (4) Applicability Study (presentation and discussion)
- 3. QUALIFICATION OF APPLICANT** (1) university graduate or equivalent (2) senior administrative official in governmental or semi-governmental agencies in charge of implementation and/or planning of small industry development (3) occupation experience of more than five years (4) more than 35 years of age in principle
- 4. TRAINING INSTITUTIONS** (1) Nagoya International Training Centre (NITC), JICA (2) Aichi Industrial Research Association (3) Special Steering Committee for S. I. D. Seminar

MINING AND METALLURGY

Jul. 27, '98 - Nov. 19, '98, 20 participants

資源開発

J-98-00441

- 1. PURPOSE** The purpose of the course is to enable the participants: (1) to deepen understanding of the present situation in the Japanese mining industry and the relationship between the mining industry and other industries through lectures and field trips, and (2) to enhance the knowledge and technology necessary for their mining business after going back to their respective countries. Coal mining industry will not be covered in this course.
- 2. MAIN FEATURES OF CURRICULUM** This course consists of lectures and observation tour. Participants will be divided into three groups to cover one of the following subjects: (1) Exploration (2) mining (3) mineral processing and metallurgy
- 3. QUALIFICATION OF APPLICANT** (1) university/college graduate or equivalent who has basic knowledge of mineral mining (2) mining geologist, mining engineer, milling engineer, metallurgist and other engineer concerned with mining industry who are presently employed at government institutions or private companies in the field of mining development (3) have more than five years of practical experience (4) under 40 years of age
- 4. TRAINING INSTITUTIONS** (1) Tohoku Branch, JICA (2) International Institute for Mining Technology (Minetec)
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for 2 weeks.

IMPLEMENTATION OF TQC AND STANDARDIZATION ACTIVITIES II

Jun. 23, '98 - Sep. 3, '98, 10 participants

TQC・標準化活動実践 II

J-98-00105

- 1. PURPOSE** This course is designed for managers and engineers (who are involved in promoting quality control and performing the related actual work in standardization organizations, quality control organizations or enterprises) to acquire knowledge about the necessity for TQC and Standardization, as well as the related philosophy and techniques, as the foundation for the development of manufacturing industries. Upon return to their respective countries, it is expected that the participants will effectively apply this knowledge in actual operations, as well as provide an active basis for TQC and Standardization to flourish, as supporters and advisors in these fields.
- 2. MAIN FEATURES OF CURRICULUM** The main themes of this course are: (1) the concepts of overall theory, quality theory, control theory regarding the basics of and need for TQC and Standardization (2) the techniques for solving quality problems and the methods of managing a TQC organization in actual use. (3) team study to understand how to solve problems through the TQC approach.
- 3. QUALIFICATION OF APPLICANT** (1) Currently work for promotion of standardization and/or quality control with experience of more than three years in government office, public corporation, public or private institute, or private company. (2) under 40 years of age (3) university graduate or equivalent
- 4. TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Standards Department, Agency of Industrial Science and Technology, Ministry of International Trade and Industry (3) Japanese Standards Association (JSA)
- 5. REMARKS** This course mainly covers manufacturing fields such as the mechanical, electrical and electronic, textile, and chemical industries. It does not cover such fields as the agricultural, forestry, foods, pharmaceutical, and service industries, etc.

CONFORMITY ASSESSMENT SYSTEMS FOR INDUSTRY

Jan. 19, '99 - Mar. 14, '99, 10 participants

適合性評価制度(工業分野)

J-98-00235

- 1. PURPOSE** The purpose of this course is to introduce to participants working in certification bodies, testing laboratories or inspection agencies, the certification system in Japan which has contributed greatly to quality assurance in the industrial field in Japan, as well as encouraging participants' interest in quality.
- 2. MAIN FEATURES OF CURRICULUM** The main themes of this course are: (1) philosophy of the certification system (2) Japanese certification systems, particularly the JIS (Japanese Industrial Standards) Marking System (3) voluntary and compulsory certification systems (4) international movements related to certification systems (5) assessment procedures for assuring conformity with concerned standards (6) practical inspection procedures (7) promotion of quality products in each participating country.
- 3. QUALIFICATION OF APPLICANT** (1) presently engaged in the work relating to certification, inspection and/or testing in the industrial field (2) under 40 years of age (3) university graduate or equivalent
- 4. TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Standards Department, Agency of Industrial Science and Technology, Ministry of International Trade and Industry (3) Japanese Standards Association (JSA)
- 5. REMARKS** This course mainly covers manufacturing fields such as the mechanical, electrical and electronic, and textile industries. It does not cover such fields as the agricultural, forestry, food, pharmaceutical, and service industries, etc.

EXAMINATION PRACTICE ON INDUSTRIAL PROPERTY

Sep. 3, '98 - Oct. 31, '98, 7 participants

工業所有権審査実務

J-98-00242

- 1. PURPOSE** The purpose of this course is to offer an opportunity to obtain basic practical knowledge and techniques needed for smooth operation of the industrial property system, especially concerning the role of this system in technological development and transfer of technology. Participants will also be provided with a basic knowledge of the Japanese legal system of the industrial property rights, and organizations responsible for implementation of the industrial property system and patent documentation. Participants will then be able to contribute to the further development of the industrial property system in their respective countries.
- 2. MAIN FEATURES OF CURRICULUM** This course consists of common subjects for all participants and group work. After common lectures, participants will be divided into several groups in accordance with their field of specialty.
- 3. QUALIFICATION OF APPLICANT** (1) official who has experience as an examiner for patent, design or trademark applications or its equivalent. (2) more than 2 years occupational experience as above mentioned (1) (3) under 40 years of age (4) university graduate or equivalent
- 4. TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Japanese Patent Office (JPO), Ministry of International Trade and Industry (3) Japan Institute of Invention and Innovation (JII)
- 5. REMARKS** Formerly named "Industrial Property System" (1979-1995), this course focuses on examination practice of industrial property from F. Y. 1996.

ADMINISTRATION OF INDUSTRIAL PROPERTY

Jun. 2, '98 - Jul. 4, '98, 8 participants

工業所有権行政

J-98-00261

- 1. PURPOSE** The purpose of this course is to offer an opportunity to reconfirm the importance of Industrial Property (IP) System for the economic and technological development through studying the Japanese experiences, and discuss some ideas for further development of management of IP system in their respective countries.
- 2. MAIN FEATURES OF CURRICULUM** The main themes of this course are: (1) Japanese IP system and its management and administration (2) role of IP system for economic and technology development in Japan (3) further development of management of IP system in participating countries
- 3. QUALIFICATION OF APPLICANT** (1) officials of a competent government ministry or agency (industrial property office or its supervisory ministry) whose duties concern industrial property policy-making (2) university graduate or an equivalent (3) between 25 and 50 years of age
- 4. TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Japanese Patent Office (JPO), Ministry of International Trade and Industry (3) Japan Institute of Invention and Innovation (JII)
- 5. REMARKS** This course was formerly named "Seminar on Industrial Property" (1980-1995).

SENIOR SEMINAR ON INDUSTRIAL STANDARDIZATION AND QUALITY CONTROL

Oct. 20, '98 - Nov. 14, '98, 9 participants

工業標準化・品質管理シニアセミナー

J-98-00316

- 1. PURPOSE** This seminar is designed to provide informative knowledge and ideas on the actual implementation of standardization and quality control activities; (1) by introducing experiences and the current situation of Japanese activities, and (2) by presenting discussion with Japanese leaders and developers of such activities.
- 2. MAIN FEATURES OF CURRICULUM** The main themes of this course are: (1) role of standardization in industrial development (2) how to promote nation-wide standardization (3) the current situation and the future direction of international standardization activities (4) what QC is and how to promote it in companies.
- 3. QUALIFICATION OF APPLICANT** (1) Currently work for promotion of industrial standardization and/or quality control either in government office, public corporation, public or private institute, or private company (2) senior-class staff (director of department or its equivalent) presently engaged in policy-making of industrial standardization and/or quality control (3) university graduate or equivalent (4) between 35 and 50 years of age
- 4. TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Standards Department, Agency of Industrial Science and Technology, Ministry of International Trade and Industry (3) Japanese Standards Association (JSA)

LEGAL METROLOGY

Jul. 13, '98 - Dec. 13, '98, 6 participants

法定計量

J-98-00513

- PURPOSE** This course is organized for government officers who are working as senior verification officers and are responsible in verification and inspection of measuring equipments in the field of legal metrology. The purpose is to provide practical training of verification and inspection. It will serve as a good opportunity to upgrade the level of the legal metrology technology and to understand the state of the art legal metrology system and the operational method available in Japan.
- MAIN FEATURES OF CURRICULUM** This course consists of common subjects for all participants as follows. (1) technical training (16 weeks) (2) legal metrology in general (1) measuring instrument industry in Japan (ii) outline of measurement administration in regional districts (iii) international measurement term and system of units (iv) measurement administration system (v) legal metrology of Japan and abroad (vi) metric convention (b) technical subjects (i) mass standards, temperature standards, length standards (ii) statistic theory (quality control), automatic control theory (iii) regulation of legal metrology, electronic type measuring instruments (iv) present situation of exporting goods (v) international society and roles of measurement, thermophysical measurement, etc. (vi) length measuring meter and inspection, glass thermometer and inspection, taxi meter driving inspection, etc. (vii) inspection of verification standards (viii) verification of weighing instrument, water meter, gas meter, watt-hour meter (ix) periodical inspection, on-the-spot inspection (c) specialized institutes (i) Japan electric meters inspection corporation (JEMIC) (ii) Japan Quality Assurance Organization (JQA) (2) observation tour (1 week) (3) factory observation training (1 week)
- QUALIFICATION OF APPLICANT** (1) university graduate or equivalent. (2) presently engaged in legal metrology at governmental or semi-governmental services with an occupational experience of more than three (3) years in this field. Researchers are excluded. (3) Over 25 and under 40 years of age.
- TRAINING INSTITUTIONS** (1) Tsukuba International Centre (TBIC), JICA (2) National Research Laboratory of Metrology (NRLM), Agency of Industrial Science and Technology, Ministry of International Trade and Industry (3) Japanese Conference on Administrative Guidance of Legal Metrology (JCAGLM), Secretariat: Tokyo Metropolitan Inspection Institute of Weights and Measures (TMIIWM)
- REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks (50 hours).

INDUSTRIAL BIOTECHNOLOGY

Jul. 27, '98 - May 23, '99, 5 participants

生命工学研究

J-98-00285

- PURPOSE** The course is designed for researchers presently engaged in biotechnology in participating countries. Through laboratory work, basic knowledge and techniques in biotechnology and bioscience will be acquired and the ability to independently carry out research applicable to industrial needs in the own countries will be cultivated.
- MAIN FEATURES OF CURRICULUM** This course consists of individual training (9 months) in the laboratory. Each participant is to take one of the following subjects for his individual research: (1) Studies on Basic Technologies in Bioorganic Chemistry (2) Studies on the Design of Drug Delivery System for Antitumor or Antiviral Natural Product (3) Thermophilic Enzymes from Hyperthermophilic Archaea (4) Production of Functional Lipids from Microorganism (5) Studies on Triacylglycerol Biosynthetic Enzymes in Oleaginous Fungi (6) Development of Biodegradable Plastics (7) Chemoenzymatic Synthesis of Sugar Based Polymer (8) Studies on Basic Technologies in Cellular and Molecular Biology (9) Basic and Applied Studies on Stress Response in Organisms
- QUALIFICATION OF APPLICANT** (1) researcher with a master's degree or equivalent, capable of carrying out basic research in the field of biotechnology (2) presently engaged in research work in the field of biotechnology, and have occupational experience of more than three years in the said field after graduation of master's course and more than five years after graduation of bachelor's course. Administrative officers are not qualified for this course (3) over 25 and under 35 years of age
- TRAINING INSTITUTIONS** (1) Tsukuba International Centre (TBIC), JICA (2) National Institute of Bioscience and Human-Technology (NIBH), Agency of Industrial Science and Technology, Ministry of International Trade and Industry
- REMARKS** A compulsory intensive Japanese language course is to be conducted prior to the technical training for two weeks (50 hours).

POLYMER AND CHEMICAL TECHNOLOGY

Jul. 27, '98 - May 16, '99, 5 participants

物質工学研究

J-98-00268

- PURPOSE** The course is designed for researchers of national research institutes and educational institutions in participating countries, and gives the opportunity to learn research methods and gain related knowledge through research on specialized themes selected by the participants themselves and introductory lectures. Field trips scheduled in the programme are to further improve their knowledge in the practical field.
- MAIN FEATURES OF CURRICULUM** This course consists of common subjects for all participants (1 week) and individual training in the laboratory. Each participant is to take one of the following subjects for their individual research. (1) Structure and Properties of Oriented Semicrystalline Polymers and Polymer blends (2) Fabrication and Functionalization of Organized Molecular Films (3) Preparation and Evaluation of Blended Polymer Membrane for Ion Selective Sensing and Separation (4) Synthesis and characterization of photofunctional materials (5) Environmental Analysis of Organic Material (6) Application of Thermosensitive Polymers as Flocculants in Waste Water Treatment (7) Surface Modification of Polymer Materials (8) Structures and Physical Properties of Polymer Blends (9) Structure and Properties of Silicon-Based Polymers (10) Study on Fabrication of Thermoplastic Composites and Their Physical Properties (11) Study on morphology and compatibility of immiscible polymer blends (12) Membrane Separation Process of Organic-Organic Mixtures (13) Application of supercritical fluids to industrial waste treatment (14) Elimination and degradation of toxic substances in waste water and polluted air, and analysis of degradation products
- QUALIFICATION OF APPLICANT** (1) researcher with a bachelor's degree, capable of carrying out basic research in the field of polymer and chemical technology (2) presently engaged in research work in the field of polymer and chemical technology, and have occupational experience of more than three years in the said field. Administrative officers are not qualified for this course (3) over 25 and under 40 years of age
- TRAINING INSTITUTIONS** (1) Tsukuba International Centre (TBIC), JICA (2) National Institute of Materials and Chemical Research (NIMC)
- REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks (50 hours).

CATALYTIC SCIENCE

May 25, '98 - Nov. 26, '98, 6 participants

触媒科学研究

J-98-00337

- PURPOSE** The purpose of the course is to enable participants to understand both basic and practical aspects of catalysis on four main themes such as heterogeneous catalysis, homogeneous catalysis, surface science and electrocatalysis. It is aimed to help and encourage the participants through laboratory courses in one of these themes to engage themselves in catalytic research field in future.
- MAIN FEATURES OF CURRICULUM** This course mainly consists of individual research work at laboratory. Each participant is to take one of following subjects for their individual research. (1) surface science (surface structure and properties): design and construction of sophisticated equipment such as low-energy electron diffraction and high-energy electron diffraction (2) surface chemistry (surface molecular dynamics): surface molecular dynamics sensitive to reaction sites and dynamics of new reaction paths induced by ultraviolet laser radiation (3) heterogeneous catalysis-A (advanced catalyst design): catalysis for environmental chemistry and saving natural resources and energy (eg. utilizing and replacing freon gas) (4) electrocatalysis (interfacial energy conversion): characterization and design of solid-liquid interfaces at the atomic and molecular levels (5) heterogeneous catalysis-B (metal complex catalysis): catalysis for removing the harmful gas (nitrogen monoxide) from cars and thermal power plants etc. which causes air pollution and acid rain (6) homogeneous catalysis (catalysis in fine organic synthesis): organic synthesis using organometallic compounds.
- QUALIFICATION OF APPLICANT** (1) engaged in surface chemistry, organic chemistry, synthetic chemistry, applied chemistry, industrial chemistry, materials chemistry, catalytic science, electrochemistry or related fields (2) have a master's degree or be equivalent with scientific experience of more than two years after graduation from university (3) over 25 and under 40 years of age
- TRAINING INSTITUTIONS** (1) Hokkaido International Centre, Sapporo (HICS), JICA (2) Catalysis Research Center, Hokkaido University

BIOINDUSTRIES

May 5, '98 - Jul. 31, '98, 8 participants

バイオインダストリー

J-98-00357

- 1. PURPOSE** The course aims at providing with recent and practical knowledge on bioindustry.
- 2. MAIN FEATURES OF CURRICULUM** The course mainly covers (1) Outline of Biotechnology, (2) Fundamental Biotechnology; Plant Cell Engineering, Recombinant DNA, Bioreactor, Cell Fusion, Biotechnology - Supporting Technology, Human and Animal Cell Engineering, Physiologically Active Substances of Plants (3) Application of New-Technology; Biopharmaceuticals, Diagnostics, Industrial Enzymes, Molecular Biology Research, Food Industries, Chemical Industry, Bioremediation (4) Future Perspective of Biotechnology; Biosensing, Marine Biotechnology, Protein Engineering, Primates (5) Administrative Policy, Safety and Intellectual Proprietary rights of Products; New Policy for Biochemical Industry, Safety of Products, Patents
- 3. QUALIFICATION OF APPLICANT** (1) expert presently engaged in biotechnology or related technology at industry, research/educational institutes with more than five years of experience (2) university graduate or equivalent (3) between 30 to 45 years of age
- 4. TRAINING INSTITUTIONS** (1) Nagoya International Training Centre (NITC), JICA (2) Japan Bioindustry Association (JBA) (3) public institutes, universities, industries
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks (50 hours).

FINE CERAMICS APPLICATION

May 11, '98 - Aug. 2, '98, 7 participants

ファインセラミックス応用技術

J-98-00387

- 1. PURPOSE** The course is aimed at providing with applied technology, knowledge and information about Fine Ceramics and other High Technology Materials. The demand has been incessantly growing in recent years, so as to expedite the development of the respective countries.
- 2. MAIN FEATURES OF CURRICULUM** Characteristics and applications of high technology materials, mainly fine ceramics, as Mechanical properties, Chemical durabilities, Thermal properties, Application at high temperature, Electronic properties, Magnetic properties, Application as sensor, Optical properties, Biological application, Composite ceramics materials, and other materials, as New metals, Composite materials, Others. The course is composed of lectures, discussions and observation tour (mainly factory visits). Lectures; (1) General information about high technology materials, (2) Powder synthesis, (3) Manufacturing technology of fine ceramics, (4) Chemical and physical properties of fine ceramics, (5) Test and evaluation methods of fine ceramics
- 3. QUALIFICATION OF APPLICANT** (1) experts presently engaged in the field of mechanical, electrical, chemical and material engineering (2) university graduate or equivalent (3) between thirty '30' and forty '40' years of age
- 4. TRAINING INSTITUTIONS** (1) Nagoya International Training Centre (NITC), JICA (2) Japan Fine Ceramics Center (JFCC) (3) Government Industrial Research Institute, Nagoya (GIRIN) (4) public institutes and private industries
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for one week (37.5 hours).

POLYMER MATERIALS AND TECHNOLOGY

May 11, '98 - Aug. 30, '98, 6 participants

高分子材料工学

J-98-00394

- 1. PURPOSE** The course aims to introduce to the participants knowledge and techniques concerning manufacture and quality control of polymer materials, and to foster competent specialists who are able to test and evaluate polymer materials, based on broad and profound knowledge and experience in their specialized field.
- 2. MAIN FEATURES OF CURRICULUM** In this course the emphasis is put on laboratory experiments. The main themes are: (1) properties of polymer materials and their manufacture (2) evaluation and testing techniques of polymer materials (3) molding techniques (4) application techniques of functional polymer materials
- 3. QUALIFICATION OF APPLICANT** (1) university/college graduate in chemistry or chemical engineering, or equivalent (2) at least 3 years of experience in polymer technology (3) between 25 and 35 years of age
- 4. TRAINING INSTITUTIONS** (1) Osaka International Center (OSIC), JICA (2) Osaka Municipal Technical Research Institute (OMTRI)
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks.

ADVANCED MATERIALS

Jan. 18, '99 - Sep. 19, '99, 6 participants

先進材料

J-98-00443

- 1. PURPOSE** Course participants, who will be specialists qualified and experienced in high-temperature manufacture of glass, ceramic, carbon-based and other inorganic materials, will be introduced to broadly based advanced material technology of a still higher level. The course aims thus to promote technical development and research teams, and especially capable specialist personnel, in developing countries. Participants will acquire broad-based knowledge of advanced glass materials and high-temperature materials in addition to learning technologies relating to specific fields. In this way, research and technical development capability will be enhanced.
- 2. MAIN FEATURES OF CURRICULUM** This course consists of common subjects for all participants and individual research work in the laboratory. (1) lectures: Fundamental knowledge of advanced materials and introduction of the latest information on advanced materials (9 days) (2) practices: Analysis equipment training (5 days) (3) specialized training (7 months) Each participant is to take one of the following subjects for their individual research. (a) Optical Materials Science Section (b) Glass Structure Section (c) Advanced Glass Section (d) Inorganic Materials Section (e) Ceramic Material Section (f) High Temperature Materials Section
- 3. QUALIFICATION OF APPLICANT** (1) be mid-ranking researchers employed by a university or research institute or engaged in technical development in industry, (2) at least three years' occupational experience in this field, (3) have a master's degree or the equivalent, (4) under 35 years of age
- 4. TRAINING INSTITUTIONS** (1) Osaka International Centre (OSIC), JICA (2) Osaka National Research Institute (ONRI)
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for four weeks.

ORGANIC FINE-CHEMICALS TECHNOLOGY

Aug. 10, '98 - Nov. 29, '98, 6 participants

有機ファインケミカルズ工学

J-98-00381

- 1. PURPOSE** The participants of this course, who are researchers and engineers engaged in research on the synthesis of organic fine-chemicals and the development of their applications and uses, will be introduced to techniques of synthesis, analysis and control of environmental pollution through lectures, practices and observations. It is hoped that they will contribute to the development of knowledge and technologies in the relevant field in their countries.
- 2. MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on laboratory experiments. The main themes are: (1) industrial organic chemistry (lecture) (2) instrumental analysis (lecture, practice) (GC, LC, MASS, NMR, IR, UV, EA, light scattering, zeta potential, ion chromat, capillary GC, DSC) (3) organic synthetic chemistry (lecture, practice) (4) organic chemistry and organic structure (5) synthesis of color-material (e. g., dye-stuff), and application techniques (lecture, practice) (6) textile processing and dyeing techniques (lecture) (7) synthetic methods of intermediate products of pharmaceutical drugs and pesticides (lecture, practice) (8) detergent-cleaning techniques (lecture, practice) (9) adsorption materials techniques (lecture, practice) (10) environmental pollution control techniques (lecture, practice) (11) factory observation
- 3. QUALIFICATION OF APPLICANT** (1) holding bachelor's degree in organic chemistry, or organic industrial chemistry (especially, synthesis and application of color-stuff chemistry, dyes, detergents or organic chemicals' intermediates) or the equivalent (2) between 25 and 40 years of age (3) more than three years of experience of manufacture, application or research in organic chemical technology
- 4. TRAINING INSTITUTIONS** (1) Osaka International Centre (OSIC), JICA (2) Osaka Municipal Technical Research Institute (OMTRI)
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for one week.

SURFACE FINISHING TECHNOLOGY FOR MATERIALS (NEW PROCESSING IN METAL FINISHING, CORROSION PROTECTION, RECYCLING & WASTE WATER TREATMENT) II

May 11, '98 - Sep. 14, '98, 5 participants

表面改質技術(金属・非金属・新素材及び防食)II J-98-00066

- 1. PURPOSE** The course is designed to: (1) acquire knowledge and techniques on effective usage of materials (2) improve quality of materials and products in participating countries, and (3) lead their industries to minimize problems.
- 2. MAIN FEATURES OF CURRICULUM** (1) Basic Knowledge; substrate materials, sintered material, composite and new other materials, corrosion behavior and protection (2) Surface Finishing Technology; electroplating, electroless plating, electroforming, anodizing, galvanizing, metal plating on plastic substrate and other materials, physical vapor deposition [PVD] and chemical vapour deposition [CVD] with or without aid of plasma, plasma nitriding and carburization, chemical conversion treatment, Preparation of printed circuit board and electric parts by electroplating and electroless plating; Surface finishing technology for autos and other transport vehicle, etching process for electric lead frames (3) Related Technology; measurement of surface properties, resource and recycling of materials in surface technology, waste water treatment, equipment for the processes environmental treatment (4) Other Related Items; enameling and painting process, quality control method, Rectifier, required jigs, technical observation and training practice of main important processes, electroplating bath and chemicals, environmentally harmonic process.
- 3. QUALIFICATION OF APPLICANT** (1) university graduate or equivalent (2) presently engaged in research institutes on industries and qualified in their respective fields (3) occupational experience of more than two years (4) under 35 years of age
- 4. TRAINING INSTITUTIONS** (1) Nagoya International Training Centre (NITC), JICA (2) Aichi Industrial Research Association (AIRA) (3) Industrial Research Institute, Aichi Prefectural Government (4) private industries and other institutes
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for three and a half weeks (77.5 hours).

QUALIFIED METAL CASTING TECHNOLOGY II (ADVANCED FOUNDRY ENGINEERING)

Aug. 31, '98 - Feb. 22, '99, 5 participants

高品位鋳物技術II

J-98-00021

- 1. PURPOSE** To provide with techniques and knowledge on problems of quality and productivity of metal castings; from sand control, modern molding processes and casting design to melting control of metals, especially ferrous metal castings.
- 2. MAIN FEATURES OF CURRICULUM** This course mainly covers: (1) Properties of the casting (gray iron and ductile iron castings, carbon and alloyed steel casting, Cu and Al alloy castings) (2) Foundry sands and molding processes; kind of sand, their quality and use, modern molding processes, their mold properties and use (3) Melting control; foundry raw materials, cupola furnace, low and high frequency furnaces, arc furnace (4) Casting design theory and practice of casting design for ferrous and nonferrous metal castings in order to solve problems of quality (5) equipment modernization.
- 3. QUALIFICATION OF APPLICANT** (1) engineer presently engaged in actual works of foundry engineering/technology at industry/research or educational institute with more than three years of experience (2) university graduate or equivalent (3) under 40 years of age
- 4. TRAINING INSTITUTIONS** (1) Nagoya International Training Centre (NITC), JICA (2) Government Industrial Research Institute, Nagoya (GIRIN) (3) Industrial Research Institute, Aichi Prefectural Government
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for four weeks (115 hours).

STEEL PROPERTIES AND ITS APPLICATIONS

Jun. 1, '98 - Oct. 10, '98, 9 participants

鋼材の加工と加工特性

J-98-00256

- 1. PURPOSE** The purpose of this training course is to provide participants with indispensable knowledge and techniques in the usage of steel, the selection of fabrication methods and conditions appropriate to the properties of each type of steel.
- 2. MAIN FEATURES OF CURRICULUM** Participants will understand steel properties and its application through acquiring knowledge of production methods, processes, property evaluation, testing and inspection methods of steel materials. The subjects covered in the course are: (1) fundamental properties of steel (2) steel production and properties (3) techniques of testing and inspection (4) casting, forging and welded structures (5) quality control
- 3. QUALIFICATION OF APPLICANT** (1) Engineers with more than three years' occupational experience in the field of production, fabrication or inspection of steel products (2) university graduate or equivalent in metallurgy or mechanical engineering (3) 35 years of age or less
- 4. TRAINING INSTITUTIONS** (1) Kyushu International Centre (KIC), JICA (2) Kitakyushu International Techno-cooperative Association (3) Kyushu Institute of Technology
- 5. REMARKS** A compulsory 25-hour Japanese language course will be conducted prior to the technical training.

HEAT TREATMENT TECHNOLOGY

Apr. 13, '98 - Jul. 6, '98, 8 participants

熱処理技術

J-98-00260

- 1. PURPOSE** To provide with techniques and knowledge on heat treatment so as to enable them to contribute to promotion and modernization of industries in their countries through upgrading the reliability of machinery and metallic products.
- 2. MAIN FEATURES OF CURRICULUM** (1) Metallic materials and fundamentals of heat treatment of steel, (2) Heat treatment equipments; furnaces, vacuum furnaces, temperature measurement and control, etc. (3) Heat treatment of structural steel; automobile springs, hot-rolled steel plates, steel castings, quench and tempering of structural steels, (4) Heat treatment of high speed steels (die steels and bearing steels) (5) Conventional case hardening and advance surface hardening; drip feed type atmosphere heat treatment, gas carburizing and gas soft nitriding, gas nitriding and ion nitriding/induction hardening, surface hardening by plasma powder welding, by metal spraying, CVD, PVD, ion implantation etc. (6) Heat treatment of nonferrous metals and alloys; casting and heat treatment of aluminum alloys etc. (7) Laboratory practices on check and evaluation of quality of heat treated products; hardness measurement and microscopic examination of test specimens etc.
- 3. QUALIFICATION OF APPLICANT** (1) engineers presently engaged in this field of technology at industries, research institutes or technical training institutes with more than 2(two) years of experience (2) university graduate or equivalent (3) between 26 and 38 years of age
- 4. TRAINING INSTITUTIONS** (1) Nagoya International Training Centre (NITC), JICA (2) Industrial Research Institute, Aichi Prefectural Government (3) Aichi Industrial Research Association (AIRA)
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks (35 hours).

MAINTENANCE OF CONSTRUCTION MACHINERY II

May 12, '98 - Aug. 9, '98, 8 participants

建設機械整備 II

J-98-00162

- 1. PURPOSE** The purpose of the course is to provide participants with techniques and knowledge on planning and management of maintenance shops as well as maintenance of construction machinery.
- 2. MAIN FEATURES OF CURRICULUM** Most part of the course is practical training in factories and workshops, using actual construction machinery. It covers; (1) theoretical aspects of management and maintenance (2) practical maintenance techniques of major components (engine, clutch, torque converter, transmission, power shift transmission, final drive, differential gear, brake, steering, hydraulic system, undercarriage, etc.) (3) practical maintenance/operation techniques of major machines (bulldozer, grader, wheel-loader, hydraulic excavator, crane, compaction machinery, dump truck, etc.)
- 3. QUALIFICATION OF APPLICANT** (1) university graduate in mechanical engineering or equivalent with more than three years of occupational experience (2) under 40 years of age (3) presently engaged in or expected to be engaged in planning and administration work of construction machinery in the near future
- 4. TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Construction Equipment Division, Economic Affairs Bureau, Ministry of Construction (3) Japan Construction Mechanization Association (JCMA)
- 5. REMARKS** Country Reports will be highly utilized both for the selection of participants and for the Country Report presentation.

HIGH TECHNOLOGY OF METAL WORKS II

Sep. 7, '98 - Feb. 22, '99, 6 participants

金属加工高品質化技術 II

J-98-00175

- 1. PURPOSE** To provide with techniques and knowledge on metal works engineering; die making and design, precision measurement, metal working and related technologies.
- 2. MAIN FEATURES OF CURRICULUM** This course mainly covers: (1) Materials and Treatment; materials, powder metallurgy, heat treatment, surface modification (2) Cutting/Grinding; cutting mechanism, tools and condition, grinding, machining accuracy (3) Die Design/Making and CAD, CAM (4) Plastic Working; die & punch, press, drawing (5) Non-traditional Machining; electric discharge, laser beam, jet, chemical, electrochemical (6) Precision Measurement; hardness, surface roughness, roundness, contour, 3-D (7) Factory Automation; numerical control, industrial robots, mechatronics, FMS, CIM (8) Other Related Technologies
- 3. QUALIFICATION OF APPLICANT** (1) engineer presently engaged in metal works technology at industries, research institutes or educational institutes with more than two years of experience (2) university graduate or equivalent (3) between 24 and 40 years of age
- 4. TRAINING INSTITUTIONS** (1) Nagoya International Training Centre (NITC), JICA (2) National Industrial Research Institute of Nagoya (NIRIN) (3) Industrial Research Institute, Aichi Prefectural Government (AIRI) (4) Aichi Industrial Research Association (AIRA) (5) Nagoya University
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for four weeks (110 hours).

DESIGNING AND IMPROVEMENT OF PRODUCTION SYSTEM

May 11, '98 - Sep. 20, '98, 5 participants

生産システム改善技術

J-98-00266

- 1. PURPOSE** To deepen the understanding on ways to design the production system, namely, the process of converting various inputs such as human resources, machines, materials and methods into products, and to conduct continuous improvement (Kaizen in Japanese) to the elements by comparing experiences of Japanese industries.
- 2. MAIN FEATURES OF CURRICULUM** (1) Outline of Production System; Structure of production system and production management, Company-wide problem solving concept, Role of managers, Policy deployment, Individual country report presentation (2) Design of Production Management System; System design for the management, Production management, Quality control, Cost control, Equipment maintenance (3) Operation Control and Improvement Techniques; Industrial engineering, Operation control, Safety control, Improvement activity, People handling technique (4) Case Study of the Integrated Production System; Product and manufacturing process of a subject company, Features of system design, Features of operation system, Viewpoints for further improvement (5) Individual Presentation and Summary; Individual report making for the future application, Individual presentation, Mutual discussion, Summary
- 3. QUALIFICATION OF APPLICANT** (1) managers and staff in manufacturing industries, or officials of public organization who are providing guidance service to regional small and medium manufacturing industries (2) experience of more than 5 years in their field (3) university graduates or equivalent (4) under forty-five '45' years of age
- 4. TRAINING INSTITUTIONS** (1) Nagoya International Training Centre (NITC), JICA (2) CHU-SAN-REN (Central Japan Industries Association) (3) related industries
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks (50 hours).

**AUTOMATIC CONTROL
(GENERAL INTRODUCTION)**

Jul. 6, '98 - Nov. 27, '98, 7 participants

自動制御(基礎)

J-98-00310

- PURPOSE** This training course is programmed for those who specialized in mechanical engineering, electrical engineering and measurement in the faculty of technology at universities. The purpose of the course is to provide participants with basic theory and practice on automatic control, automatic control devices and related technology.
- MAIN FEATURES OF CURRICULUM** The course is conducted in the form of lectures, practice, exercise on simulator and factory observations, in order to enhance participants' basic and practical knowledge of automatic control to prevent malfunction and damage of the whole system in plant. The following subjects are mainly covered in the course: (1) basic of automatic control (2) basic of control theory (3) computer literacy (4) basic lesson and application of micro computers (5) process control (6) digital process control system simulation (7) sequency control (8) industrial electric control system
- QUALIFICATION OF APPLICANT** (1) Engineers with more than four years of occupational experience in the field of production, planning of plants and machinery (2) presently engaged in automation (or will be engaged in) (3) university graduate or equivalent in electrical, control or mechanical engineering (4) 40 years of age or less
- TRAINING INSTITUTIONS** (1) Kyushu International Centre (KIC), JICA (2) Kitakyushu International Techno-cooperative Association (3) Kyushu Institute of Technology (4) Mechanics and Electronics Research Institute, Fukuoka Industrial Technology Center
- REMARKS** A compulsory 25-hour Japanese language course will be conducted prior to the technical training.

MACHINE CONDITION DIAGNOSIS TECHNIQUE

Jun. 22, '98 - Oct. 18, '98, 8 participants

設備診断技術

J-98-00338

- PURPOSE** This training course is set up for maintenance directors, managers and engineers who are responsible for planning, management and supervision of maintenance activities. The purpose of the course is to provide participants with new inspection techniques for plant maintenance including the latest diagnosis techniques and condition based maintenance system.
- MAIN FEATURES OF CURRICULUM** The training course is programmed to help participants acquire knowledge on inspection techniques including latest condition diagnosis techniques and condition based maintenance in practice through a series of lectures, practice with simulators and plant observations. The following subjects are covered in the course: (1) introduction to maintenance management and engineering (2) reliability and maintainability engineering (3) fundamental of machine condition diagnosis technique (CDT) (4) vibration and its measurement (5) vibration analyzing instrument (6) diagnosis methods for rotating machines and elements (7) basic concept of condition based maintenance system (CBM) (8) non-destructive testing (9) maintenance control (10) application of computer system to CDT and maintenance control (11) practice of maintenance management and machine diagnosis (12) corrosion diagnosis (13) diagnosis of electrical machines (14) total productive maintenance (TPM)
- QUALIFICATION OF APPLICANT** (1) presently engaged in maintenance work in industrial plants with more than three years of maintenance experience (2) more than one year of experience in computer operation (3) university graduate or equivalent in engineering (4) 40 years of age or less
- TRAINING INSTITUTIONS** (1) Kyushu International Centre (KIC), JICA (2) Kitakyushu International Techno-cooperative Association (3) Kyushu Institute of Technology
- REMARKS** A compulsory 25-hour Japanese language course will be conducted prior to the technical training.

AIR-CONDITIONING ENGINEERING

Aug. 11, '98 - Nov. 22, '98, 6 participants

空調技術

J-98-00383

- PURPOSE** This course is organized for the purpose of fostering middle class administrative engineers who are equipped with comprehensive techniques and knowledge required to design, install, operate, and maintain various kinds of most advanced air-conditioning systems. It is expected of them to train engineers and give them proper instructions and advice, after finishing this course.
- MAIN FEATURES OF CURRICULUM** This course consists of lectures and practices as follows: (1) hardware (fundamentals of air conditioner) (2) software (general study of air conditioning systems) (3) quality control (a) process management (b) quality control technology (4) practice (a) general work of system design (b) drawing up plans (c) application designing of equipment (d) execution of general design work (5) factory visits for related equipment
- QUALIFICATION OF APPLICANT** (1) graduates from university majoring in the field of mechanical engineering or electrical engineering (2) under 40 years of age (3) experience of at least 3 years in air-conditioning engineering including system layout
- TRAINING INSTITUTIONS** (1) Osaka International Centre (OSIC), JICA (2) Kanaoka Training Center, Sakai Plants, Daikin Industries Ltd. (3) Daikin Plant Co., Ltd.
- REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks.

PLANT MAINTENANCE MANAGEMENT

Jan. 11, '99 - May 15, '99, 9 participants

保全管理

J-98-00413

- PURPOSE** The purpose of this course is to enhance the maintenance management capability of managers and engineers in the maintenance departments of processing industries. The course provides participants with training on effective and rationalized utilization of management resources such as workers, materials, equipment, information and funds. The course also aims at technical transfer of concrete maintenance management procedures required for the execution of preventive maintenance.
- MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on the introduction of Japanese experience or the present state of the maintenance management of leading Japanese companies of various industrial fields to enable participants to apply and manage the maintenance function of each corporation in respective countries. The subjects covered in the course are: (1) outline of maintenance and its system (2) management of plants (3) computer literacy (4) management policy and control (5) maintenance of bearing (6) actual samples of corrosion and countermeasures (7) the diagnosis technique of machine (8) non-destructive tests (9) training of repairing techniques (10) improvement methods (11) repairing and change of parts (12) inspection of electric equipment manufacturing and maintenance of electric equipment (13) management and data (14) how to make inspection plan (15) scheduled time for repairing and repairing plan (16) control of maintenance materials, and management of welding and assembling (17) activities of maintenance in Japanese leading factories
- QUALIFICATION OF APPLICANT** (1) have more than three years' occupational experience in the field of plant maintenance (2) university graduate or equivalent in engineering (3) not less than 30 and not more than 40 years of age
- TRAINING INSTITUTIONS** (1) Kyushu International Centre (KIC), JICA (2) Kitakyushu International Techno-cooperative Association
- REMARKS** A compulsory 25-hour Japanese language course will be conducted prior to the technical training.

MATERIAL HANDLING SYSTEM IN THE PLANT FOR HIGH PRODUCTIVITY

Nov. 23, '98 - Apr. 14, '99, 6 participants

工場搬送システム

J-98-00414

- 1. PURPOSE** The ratio of haulage in total production cost is considerably large in manufacturing. Therefore, in order to reduce production costs, it is very important to plan and introduce appropriate material handling in factories. Considering the above condition, this training course aims at instructing participants about planning and basic design of equipment used in material handling in plants.
- 2. MAIN FEATURES OF CURRICULUM** (1) basis of physical distribution, and the outline of physical distribution equipment (2) factory plan and distribution management (3) planing and case studies of product distribution in factories (4) outline of industrial engineering (5) basic design of distribution equipment (cranes) by personal computer and CAD (6) plant maintenance and maintenance management
- 3. QUALIFICATION OF APPLICANT** (1) university graduates in engineering or equivalent (2) engineers who have at least 3 years of occupational experience in the field of plant equipment (3) 40 years of age or less
- 4. TRAINING INSTITUTIONS** (1) Kyushu International Centre (KIC), JICA (2) Kitakyushu International Techno-cooperative Association
- 5. REMARKS** (1) A compulsory 25-hour Japanese language course will be conducted prior to the technical training.

OIL HYDRAULICS AND MECHATRONICS (MACHINE DRIVE AND CONTROL TECHNOLOGY)

Oct. 26, '98 - Mar. 21, '99, 6 participants

油圧とメカトロニクス(機械の駆動と制御)

J-98-00415

- 1. PURPOSE** The purpose of the course is to enhance the capabilities of mechanical or electrical engineers who require knowledge of machinery controls through the combined technologies of mechanics, oil hydraulics and electronics as follows: (1) Basic concept of machinery control technology in oil hydraulics, electrohydraulic systems, power electronics and servo devices, (2) Basic theories of servo control, hydraulic components, power electronics components and variable speed electric motors, (3) Actual applications of various oil hydraulic systems, electronic power control systems and energy saving systems, (4) Observation visits to manufacturers related to the above items. Participants are to attend lectures and practices as follows: (1) Basic subjects such as hydro dynamics computational fluid dynamics, servo control theory, power semi-conductors, hydraulic components, hydraulic control valves, mechatronics components, (2) Electro-hydro systems, hydraulic systems, hydraulic actuators, (3) AC servo motor controls, inverter, computer applications, (4) Applications to construction machinery, injection molding machine, marine machinery, robot system, energy saving systems, (5) Design practice CAD operation, piston pump design, C language.
- 2. MAIN FEATURES OF CURRICULUM** (1) Occupational experience in either research, design, production or maintenance in machinery controls, oil hydraulics, electro-mechanics, (2) University graduate or equivalent, (3) 35 years of age or less.
- 3. QUALIFICATION OF APPLICANT** (1) Kyushu International Centre (KIC), JICA (2) Kitakyushu International Techno-Cooperative Association A compulsory 20-hour Japanese language course will be conducted prior to the technical training.

INSPECTION AND TESTING TECHNIQUES FOR HOUSEHOLD ELECTRICAL APPLIANCES

Sep. 24, '98 - Nov. 21, '98, 5 participants

家庭用電気製品検査技術

J-98-00416

- 1. PURPOSE** The purpose of this course is to introduce inspection and testing techniques for household electrical appliances by providing lectures and practical training, in order to help these countries develop or maintain their industrial product quality and strengthen their competitive positions in the world market. The course is expected to be one of the measures aimed at overcoming the trade imbalance problem.
- 2. MAIN FEATURES OF CURRICULUM** This course consists of lecture, practical training and observation tour. Introduction to the export inspection system, industrial standardization, and quality control are included in lectures. Technology transfer by practical training uses several general electric equipments.
- 3. QUALIFICATION OF APPLICANT** (1) testing staff belonging to government nation wide, or public institution authorized by government nation wide, or under the control of the government (2) be with more than three years of occupational experience in electric field (3) college graduate or equivalent, having majored in electrical, electronics, or mechanical engineering (4) between 25 and 40 years of age
- 4. TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) National Institute of Technology and Evaluation, Ministry of Trade and Industry (MITI) (3) Japan Quality Assurance Organization (JQA) (4) Japan Electrical Testing Laboratory (JET)

SHIP SAFETY AND MARINE POLLUTION PREVENTION -IMPLEMENTATION OF THE INTERNATIONAL CONVENTIONS-

Jan. 19, '99 - Dec. 12, '99, 20 participants

船舶安全・海洋汚染防止

J-98-00464

- 1. PURPOSE** The purpose of the course is to provide participants with fundamental and practical knowledge, and applicable technology in the field of construction, repairing and maintenance of ships, and also in the field of inspection in accordance with requirements of IMO/ILO conventions, and thus to contribute globally to ship safety and marine pollution prevention.
- 2. MAIN FEATURES OF CURRICULUM** This course consists of (1) obligatory lectures for all participants (2) optional lectures for which participants will be divided into 3 groups according to their experience, and (3) optional practical training in (a) ship survey procedure and practice or (b) ship construction, repairing and maintenance. The following major subjects will be covered in the course (1) obligatory subjects: basic plan and design on ships; hull design; outfitting design on ships; propulsion engines; electric and communication equipment; quality control; international conventions-general (2) optional subjects (a) for administration officials; implementation and interpretation of international conventions; regulation on ship safety and marine pollution prevention; plan approval procedure; procedures of surveys during construction and periodical surveys (b) for shipyard engineers; hull construction; outfittings and maintenance of ships; installation and maintenance of main and auxiliary engines; quality assurance; technical standards on tests and examination; hull and machinery damage and countermeasure (c) for minor shipyard engineers; ship design and construction-general; ship maintenance; quality assurance; ship inspection procedure; ship repairing; implication and interpretation of international conventions.
- 3. QUALIFICATION OF APPLICANT** (1) applicants should be one of the following; (a) administration officials in the field of ship safety and marine pollution prevention. (ship safety administration officers, ship inspectors, PSC officers, etc.) (b) engineers in the field of shipbuilding and marine engineering. (hull and machinery engineers, owners superintendents, instructors/lectures, etc.) (c) engineers in the field of ship repairing or maintenance. (hull and machinery maintenance engineers, etc.) (2) applicants should also be graduate engineers or equivalent, and have at least one year experience of (1) above. (but, this occupational experience is not required for administration officials of (1) (a) above.) (3) not more than 35 years of age.
- 4. TRAINING INSTITUTIONS** (1) Kanagawa International Fisheries Training Centre (KIFTC), JICA (2) Maritime Technology and Safety Bureau, Ministry of Transport (3) Overseas Shipbuilding Cooperation Center (OSCC)
- 5. REMARKS** A compulsory intensive Japanese language course for 200 hours will be conducted prior to the technical training.

AUTOMOBILE SAFETY AND POLLUTION CONTROL TECHNOLOGY

May 11, '98 - Jul. 5, '98, 12 participants

自動車安全・公害対策技術

J-98-00475

- PURPOSE** This course is intended for administrative engineers in leading posts to prepare and promote policies and measures for socio-economical growth through motorization, and for specialists in the automotive industry. The participants in this course will undergo training of highly specialized contents, such as automotive safety, pollution control, energy problems, and new technology applications. It is hoped that this training will be of help not only to foster specialists in automotive engineering but also to assist the plans and development for the socio-economic growth along with motorization. It is noted that the programme of this course is not aimed at offering techniques and know-how immediately useful in automobile production and repair work.
- MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on introduction of Japan's experience and basic theories of automobile safety and pollution control technology. The main themes are: (1) motor industry in Japan (2) motorization and infrastructure (3) advanced technology (4) structure, performance of automobile (5) practice of automobile performance test.
- QUALIFICATION OF APPLICANT** (1) administrative engineer presently in leading posts in government institutions with at least three years occupational experience in promotion of the motorization, automotive industry and with special concern on environmental protection and automotive safety (2) university graduate in mechanical engineering or related field, such as environmental engineering or design engineering (3) over 25 and under 40 years of age
- TRAINING INSTITUTIONS** (1) Tsukuba International Centre (TBIC), JICA (2) Japan Automobile Research Institute (JARI)

INSPECTION AND TESTING TECHNIQUE FOR TEXTILE PRODUCTS

Jan. 19, '99 - Mar. 18, '99, 8 participants

繊維製品検査技術

J-98-00417

- PURPOSE** The purpose of this course is to introduce to the participants inspection and testing techniques for textile products through lectures and practical training, in order to help these countries develop or maintain their industrial product quality and strengthen their competitive positions in the world market. The course is expected to be one of the measures that helps contribute to overcome the trade imbalance problem.
- MAIN FEATURES OF CURRICULUM** This course consists of lecture, practical training and observation tour. The lectures include introductions to the Japanese textile industry, quality assurance system and quality control. Inspection and testing technology will be transferred by using concrete materials and equipments.
- QUALIFICATION OF APPLICANT** (1) testing staff belonging to government inspection organization, or public institution authorized by government inspection organizations, or under the control of the government, with more than three years of occupational experience in the textile field (2) college graduate or equivalent, having majored in textile or chemical engineering (3) between 25 and 40 years of age
- TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) National Institute of Technology and Evaluation, MITI (3) Japan Textile Products Quality and Technology Center (4) Japan Synthetic Textile Inspection Institute Foundation (5) Japan Spinners Inspecting Foundation (6) Japan Wool Products Inspection Institute Foundation

RENOVATION OF INDUSTRIAL EQUIPMENT

Feb. 15, '99 - Jul. 4, '99, 9 participants

設備のリノベーション

J-98-00488

- PURPOSE** The purpose of this course is to enhance the capability of engineers by learning the basic knowledge of the utilization of existing equipment and facilities effectively, to find out the capability of the renovation, and to redesign existing equipment. The course also aims at providing the participants with skills in preparing purchase specifications of improved equipment parts.
- MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on providing the participants with the basic techniques and their application as well as project management which will help them to upgrade their required techniques to improve their operation. The subjects covered in this course are: (1) basic techniques (a) introduction to renovation of industrial equipment (b) computer literacy (c) techniques improving equipment (d) sequence control (e) process control (f) introduction to maintenance (g) maintenance management (h) equipment inspection technique (inspection using five sense, machine condition diagnosis technique) (i) rust prevention and corrosion prevention (j) welding processes (k) selection of materials (l) testing of materials (m) selection of motors and electrical control (n) nondistinctive inspection (o) CAD (2) modification techniques (a) case study of plant design and practice (b) practice in design of heat exchange (c) design of pressure vessels (d) selection of equipment/devices and writing specifications thereof (e) selection of general purpose machines and writing specifications thereof (f) plan and design of piping (g) design of conveyor unit (h) case study of equipment renovation (i) in-plant training
- QUALIFICATION OF APPLICANT** (1) more than five year's experience in equipment design, construction or maintenance in the field of process industries such as chemical, cement, oil refinery, iron and steel plant (2) university graduate or equivalent in mechanical or chemical engineering (3) 40 years of age or less.
- TRAINING INSTITUTIONS** (1) Kyushu International Centre (KIC), JICA (2) Kitakyushu International Techno-cooperative Association
- REMARKS** A compulsory 25-hour Japanese language course will be conducted prior to the technical training.

INDUSTRIAL POLLUTION CONTROL RESEARCH

Jul. 13, '98 - Nov. 8, '98, 6 participants

産業公害防止

J-98-00363

- PURPOSE** This course is aimed at upgrading knowledge and techniques of scientists and researchers in the field of pollution control engineering, including computer technology, especially understanding knowledge and techniques in their own speciality through exercise and practical training on each subject in the individual research training.
- MAIN FEATURES OF CURRICULUM** This course consists of common lectures for all participants (2 weeks) and individual research training in the laboratory. Common lectures are given to provide participants with fundamental knowledge of industrial pollution control. Participants will then choose a certain subject on pollution control technology out of 15 to 20 subjects.
- QUALIFICATION OF APPLICANT** (1) scientist or researcher in the field of pollution control technology with more than three years of occupational experience. Administrative officers are not qualified for this course (2) university graduate or equivalent (3) have the knowledge of computer programming with FORTRAN or BASIC languages in the course of simulation technology (4) under 40 years of age
- TRAINING INSTITUTIONS** (1) Tsukuba International Centre (TBIC), JICA (2) National Institute for Resources and Environment (NIRE), Agency of Industrial Science and Technology, Ministry of Trade and Industry.

CERAMIC KILN AND FIRING TECHNOLOGY

Sep. 14, '98 - Feb. 22, '99, 8 participants

セラミック窯炉及び焼成技術

J-98-00505

- 1. PURPOSE** To provide with knowledge and technology about kiln design, kiln construction, and firing etc. concerning ceramic products which conform to the actual conditions of participating countries.
- 2. MAIN FEATURES OF CURRICULUM** The emphasis is put on lectures, practical training and observations. The main theme are: (1) Introduction of Technical Training; orientation for technical training, observation of factories of the organization concerned, general introduction to kiln and firing (2) Kiln Design and Kiln Construction; fuels and combustion, refractory materials, heat retention and transfer, bricklaying, structure of kiln, kiln design, kiln construction, electric kiln, comprehensive discussion (3) Technology on Firing in the Kiln; theory of firing, loading and kiln furniture, firing technique (kiln atmosphere) (reduction firing), measurement and control over temperature, facilities for firing and maintenance, biscuit and glost firing, inspection and test of products, comprehensive discussion (4) Related Technology; ceramic products, ceramic plant and kilns, ceramic body and glaze, testing method and quality control, observation of factories comprehensive discussion (technical discussion)
- 3. QUALIFICATION OF APPLICANT** (1) university graduate or equivalent with the practical experience of more than three years in production at educational or research institutions related to ceramics (2) expert presently engaged in the field of ceramics (3) between 25 and 39 years of age
- 4. TRAINING INSTITUTIONS** (1) Nagoya International Training Centre (NITC), JICA (2) Technical Research Laboratory, Mino Yagyo Co., Ltd.
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for three weeks (75 hours).

ENERGY MANAGEMENT

Jan. 18, '99 - Jun. 2, '99, 6 participants

エネルギー管理

J-98-00418

- 1. PURPOSE** The purpose of this course is to upgrade the knowledge and skills of managers and engineers on energy management of administration, so as to conserve energy and mitigate environmental pollution through proceeding energy management effectively and add practical effect to production activities.
- 2. MAIN FEATURES OF CURRICULUM** In this course, the emphasis is laid on subjects that will help participants to practically and concretely solve the problems in the field of energy management of their own countries. The subjects covered in the course are: (1) introduction of energy management (2) computer literacy (3) basic thermo-dynamics and basic automatic control (4) heat balance and heat measurement (5) basic theory of electricity (6) methodology of energy conservation (7) energy conservation measures for industrial furnaces (8) energy system for environmental pollution control (9) maintenance management and data (10) in-plant training
- 3. QUALIFICATION OF APPLICANT** (1) have energy management experience or will be in charge of energy management in near future (2) university graduate in Japan or post graduate in Faculty of Technology (3) 40 years of age or less (4) HAVE A SUFFICIENT COMMAND OF WRITTEN AND SPOKEN JAPANESE
- 4. TRAINING INSTITUTIONS** (1) Kyushu International Centre (KIC), JICA (2) Kitakyushu international Techno-cooperative Association
- 5. REMARKS** THIS COURSE WILL BE CONDUCTED IN JAPANESE.

ENERGY CONSERVATION

May 26, '98 - Jul. 16, '98, 13 participants

省エネルギー

J-98-00315

- 1. PURPOSE** The purpose of the course is to provide the participants with information concerning the administrative and technical aspects of Japan's energy conservation, so that they will be able to later use this knowledge in future energy conservation efforts in their own respective countries.
- 2. MAIN FEATURES OF CURRICULUM** In this course, the following major subjects will be covered through lectures, discussions, group case studies, practice and observation trips. (1) Japanese energy conservation policy and the present conservation situation in Japan (2) development of energy conservation and new technology in Japan (3) energy conservation situation in major Japanese industries (4) industrial energy conservation technology (5) methods for promoting energy conservation in industry (6) energy consumption measurement and data analysis (7) case study of the promotion of energy conservation in a model factory
- 3. QUALIFICATION OF APPLICANT** (1) university/college graduate or equivalent and presently employed in government, governmental institutions, industrial associations, or companies (2) presently engaged in work in the energy field or expected to be engaged in such work after returning to the country (3) be under 45 years of age
- 4. TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Energy Conservation Center, Japan (ECC)
- 5. REMARKS** Country Reports will be highly utilized both for the selection of participants and for the Comparative Studies.

HYDRO-ELECTRIC POWER ENGINEERING II (FOR CIVIL ENGINEERS)

May 12, '98 - Jun. 27, '98, 8 participants

水力発電II(土木)

J-98-00055

- 1. PURPOSE** The purpose of the course is to provide the participants with the latest information and knowledge concerning managing and technical aspects of the Japan's hydro-electric power industry so that the participants would be able to play their greater role for further progress and advancement of hydro-electric power generation in their respective countries.
- 2. MAIN FEATURES OF CURRICULUM** The course is formulated to cover both aspects of "electrical/mechanical engineering" and "civil engineering" alternatively. This year (Japanese Fiscal 1998), civil engineering matters will be focused mainly. The following are the major subjects this year: (1) outline of Japan's electric power industry (2) Japan's government policy and regulation relating to Japan's electric power industry (3) method of planning, designing, construction and operation and maintenance technique of hydro-power stations from the view point of electrical/mechanical engineering
- 3. QUALIFICATION OF APPLICANT** (1) civil engineers who are presently employed by governmental or private hydro-electric power utilities (2) technical college graduate or equivalent and have more than five and less than ten years of practical experience in the field of hydro-electric power engineering
- 4. TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Agency of Natural Resources and Energy, Ministry of International Trade and Industry (3) Japan Electric Power Information Center, Inc. (4) Electric Power Development Co., Ltd.