

METEOROLOGY II

Aug. 16, 1999 - Dec. 18, 1999, 9 participants

気象学 II

J-99-00187

- 1. PURPOSE** The purpose of this course is to provide participants with general and practical fundamentals applicable to various areas of operational meteorological services, through lectures, exercises, study tours and technical visits thus motivating participants to gain the comprehensive knowledge to be future leaders in their respective national meteorological services.
- 2. MAIN FEATURES OF CURRICULUM** This course mainly consists of lectures with appropriate exercises and study visits. The themes of lecture/exercises are: (1) theoretical basics and technologies for operational meteorological services (2) personal computers in meteorological services (3) meteorological satellite data (4) short, medium and long range forecasting methods including numerical weather prediction (5) selected topics from research activities at Japan Meteorological Agency
- 3. QUALIFICATION OF APPLICANT** (1) presently engaged in meteorological services for their governments or government-related public organizations (preferably having experience engaged in forecast) (2) university graduate or equivalent (WMO Classes I or II) with more than three years of occupational experience in the field of operational/practical meteorological services (3) under 40 years of age
- 4. TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Japan Meteorological Agency (JMA)
- 5. REMARKS**

VOLCANOLOGY AND SABO ENGINEERING

Mar. 20, 2000 - Sep. 18, 2000, 7 participants

火山学・砂防工学

J-99-00630

- 1. PURPOSE** The purpose of the course is to introduce participants to basic and modern concepts of volcanology and mitigation of volcanic disasters through lectures, exercises and field studies. For this purpose, the first half of the course is allotted to the common course and the second half is divided into two topics; volcanology and volcanic sabo engineering (volcanic disaster prevention engineering).
- 2. MAIN FEATURES OF CURRICULUM** This course consists of three parts; (1) common subjects for all participants (2) training for sub-groups (3) individual training at university/research institute/technical center. For the second part, participants will be divided into the volcanology group and volcanic sabo engineering group. Volcanology group studies: (2) (a) up-to-date physical and geological concept of volcanism (b) theory of seismology, geodesy, geomagnetism, geotherm and geochemistry with the aid of exercises (c) methods of volcano monitoring, data analysis and interpretation emphasizing eruption forecasting. Volcanic sabo engineering group studies (a) basic theories necessary for study and planning of erosion and sediment control engineering (b) mechanism and structure of debris mud flows (c) engineering technology and administrative countermeasures against volcanic disaster in the second part of training.
- 3. QUALIFICATION OF APPLICANT** (1) university graduate or equivalent (2) be under 35 years of age (3) presently engaged in the volcanic observation and/or disaster prevention (sabo works) and be scheduled to engage in the same field after completion of the course
- 4. TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Department of Erosion and Sediment Control, Ministry of Construction (3) Japan SABO Association
- 5. REMARKS** (1) Country Reports will be highly utilized both for the selection of participants and for the country report presentation. (2) All the participants of this course are requested to bring Volcanological or Volcanic Sabo Engineering data necessary for the theme of studies during their individual programmes. (3) An intensive Japanese language course will be conducted for one week prior to the technical training.

BRIDGE ENGINEERING II

Aug. 10, 1999 - Oct. 24, 1999, 14 participants

橋梁工学 II

J-99-00071

- 1. PURPOSE** The purpose of the course is to provide opportunities to learn the general techniques of bridge engineering, used in Japan (including planning, design and construction of bridges) so that the participants will be able to improve the technology in bridge engineering and to contribute to the development of their countries.
- 2. MAIN FEATURES OF CURRICULUM** In this course, the following major subjects will be covered through lectures, discussions and observation trips. (1) roads and bridges in Japan (2) design and construction of substructures (3) design and construction of concrete bridges (4) fundamental bridge design theory (5) design and construction of steel bridges (6) maintenance and repair of bridges
- 3. QUALIFICATION OF APPLICANT** (1) university graduate or equivalent with occupational experience of more than five years (2) presently engaged in bridge and highway construction (3) not more than 40 years of age
- 4. TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Road Bureau, Ministry of Construction
- 5. REMARKS** Country Reports will be highly utilized both for the selection of participants and for the Country Report presentation.

GEOTECHNICAL ENGINEERING

Oct. 14, 1999 - Dec. 9, 1999, 12 participants

地盤工学

J-99-00232

- 1. PURPOSE** The purpose of this course is to introduce participants to new methods and knowledge concerning fundamental theory, applied technology, various structure designs, and evaluation methods in the field of geotechnical engineering, which are essential for planning, implementation and management of public works and construction projects. NOTE: This course is designed for researchers or senior officials engaged in geotechnical engineering. It is not recommended for administrative staff who do not have a fundamental knowledge of geotechnical engineering.
- 2. MAIN FEATURES OF CURRICULUM** In this course, the following major subjects will be covered through lectures, discussions and observation trips. (1) geotechnical engineering in general (2) earth structures (3) laboratory soil testing (4) soil exploration (5) soil improvement (6) foundation of structures (7) evaluation of design
- 3. QUALIFICATION OF APPLICANT** (1) researcher or senior official in charge of geotechnical construction, administration or geotechnical construction projects, and have more than five years of practical experience in central or local government, or government related organization (2) under 45 years of age (3) university graduate or equivalent, and have knowledge of geotechnical engineering.
- 4. TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Economic Affairs Bureau, Ministry of Construction (3) The Japanese Geotechnical Society
- 5. REMARKS** Country Reports will be highly utilized both for the selection of participants and for the Country Report presentation.

SYSTEMATIC CONSTRUCTION PROJECT MANAGEMENT

Aug. 30, 1999 - Nov. 12, 1999, 9 participants

総合建設プロジェクトマネジメント

J-99-00633

- 1. PURPOSE** The purpose of this course is to help senior administrative engineers of public corporations and private enterprises to master comprehensive techniques, practical knowledge and application techniques in project planning, construction management, and quality control with a view to upgrading the ability of leading construction managers in developing countries, thus contributing to the qualitative improvement of construction technology and civil engineering works in their respective countries.
- 2. MAIN FEATURES OF CURRICULUM** The course will be conducted in the form of lectures, observations of construction sites, case studies, group work, discussions, and practical training. Emphasis will be put on case studies. The main themes are: (1) introduction of management and organization of construction projects (2) construction planning (3) construction management and methods (4) construction project management (group study)
- 3. QUALIFICATION OF APPLICANT** (1) university graduate or those who have undergone higher education in the field of civil engineering or have equivalent educational qualifications (2) at least five years of experience as construction managers (3) under 40 years of age
- 4. TRAINING INSTITUTIONS** (1) Osaka International Centre (OSIC), JICA (2) Japan Construction Training Center Foundation (JCTC) (3) Engineering Affairs Management Section Minister's Secretariat, Ministry of Construction (MOC) (4) International Affairs Division, Economic Affairs Bureau, MOC (5) Planning Department, Kinki Regional Construction Bureau, MOC
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for one week.

SEMINAR ON ADMINISTRATION FOR DISASTER PREVENTION

Jan. 26, 2000 - Feb. 26, 2000, 14 participants

防災行政管理者セミナー

J-99-00102

- 1. PURPOSE** The purpose of the seminar is to: (1) provide the latest administrative knowledge of disaster prevention as a total system of prediction, evacuation, recovery and disaster reduction. (2) show the variety of the activities and organizations involved in disaster prevention administration, give a brief outline of the individual activities and demonstrate how these are organized in the Japanese disaster prevention administrative system. (3) exchange ideas and experiences concerning natural disaster prevention, and to discuss international cooperation for natural disaster reduction.
- 2. MAIN FEATURES OF CURRICULUM** In this seminar, the emphasis is put on introduction of basic theory and exchange of ideas and experiences. The main themes are: (1) policy formation, enforcement and implementation of disaster countermeasures in developing countries (2) international cooperation for natural disaster prevention and reduction
- 3. QUALIFICATION OF APPLICANT** (1) presently engaged in government agencies responsible for disaster prevention (2) not more than 45 years of age (3) university graduate or equivalent
- 4. TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Disaster Prevention Bureau, National Land Agency
- 5. REMARKS**

CONSTRUCTION ENGINEERING II

Aug. 2, 1999 - Nov. 11, 1999, 9 participants

建設施工 II

J-99-00209

- 1. PURPOSE** The aim of the course is to help senior administrative engineers of governmental organizations to gain broader views on construction engineering by introducing the latest techniques and information related to construction engineering, thus to contribute to the development of human resources in this field of participating countries.
- 2. MAIN FEATURES OF CURRICULUM** This course consists of lectures and observations. The main themes are: (1) general information on public works in Japan and overseas construction (2) fundamental studies (a) geotechnical engineering, concrete, asphalt, steel and new materials, introduction of construction machinery, etc. (3) execution planning and management (a) work planning, process planning, introduction to construction management, machinery control, safety control, counter measures for environmental protection, cost estimation, geotechnical analysis, etc. (4) construction techniques (a) earthwork, concrete work, shield work, paving work, improvement work, foundation work, tunnel construction, bridge construction (steel and concrete), road maintenance, dam construction, Sabo etc.
- 3. QUALIFICATION OF APPLICANT** (1) university/college graduate in civil engineering or equivalent (2) under 40 years of age (3) more than five years experience in planning, design, execution and project management of civil engineering works
- 4. TRAINING INSTITUTIONS** (1) Osaka International Centre (OSIC), JICA (2) Japan Construction Mechanization Association (JCMA) (3) Construction Equipment Division, Ministry of Construction (MOC) (4) Construction Equipment Division, Kinki Regional Construction Bureau, MOC
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks.

WATER RESOURCES DEVELOPMENT AND ENVIRONMENT ASSESSMENT IN ARID AREAS

Aug. 17, 1999 - Nov. 22, 1999, 9 participants

乾燥地水資源の開発と環境評価

J-99-00620

- 1. PURPOSE** The purpose of the course is to enable the participants who are in charge of water resources development in arid and semi-arid areas to acquire the basic knowledge and technique for the development of water resources and effective use of water in the field of agriculture, thereby contributing to the solution of the problems which arise from the shortage of water and hence food in those areas.
- 2. MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on observation, report presentation, lectures which introduce Japanese experience of agricultural practice and usage of water resources in arid and semi-arid areas, and discussion by participants. It mainly covers: (1) information processes, (2) run-off analysis (3) surface and groundwater engineering (4) water management and usage planning, (5) irrigation and drainage planning, (6) water quality, (7) design method of water storage and supply facilities, (8) forest resources and (9) monitoring of forest environment. In the latter half of course, all participants is divided to 2 or 3 participants group and each group concentrates its concerns on the following fields: assessment of productivity power of plow layer, controlling of salt injury, assessment of water quality, deterioration evaluation of water storage and supply facilities, assessment forest resources, assessment of environment and so on.
- 3. QUALIFICATION OF APPLICANT** (1) presently engaged in either research, engineering, or educational activity and have more than two years of occupational experience in the field (2) university graduate or equivalent (3) not more than 50 years of age
- 4. TRAINING INSTITUTIONS** (1) Chugoku International Centre (CIC), JICA (2) Tottori University: Faculty of Agriculture, Arid Land Research Center and Faculty of Engineering
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for one week (25 hours).
- 6. OTHER** The course has been held 10 times so far, and it is the last course.

SEMINAR ON ADVANCED TECHNOLOGY OF CONSTRUCTION

May 11, 1999 - Jun. 26, 1999, 9 participants

建設工事先進技術セミナー

J-99-00179

1. **PURPOSE** The purpose of the seminar is to provide participants with the latest work methods, new materials and inspection methods so that participants will be able to contribute to improvement of construction work in their respective countries.
2. **MAIN FEATURES OF CURRICULUM** The seminar will NOT cover all the field of construction. It covers the following major subjects: (1) outline of advanced construction technology (2) advanced work methods in civil engineering works (3) application of new materials (4) advanced inspection methods
3. **QUALIFICATION OF APPLICANT** (1) university graduates of civil engineering or related courses, or equivalent (2) have more than seven years of actual experience in construction works (3) not more than 40 years of age
4. **TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Minister's Secretariat, Ministry of Construction (3) Japan Construction Training Center (JCTC)
5. **REMARKS** This seminar does not cover the field of building construction.

ENVIRONMENTAL ASSESSMENT IN INFRASTRUCTURE DEVELOPMENT

May 4, 1999 - Jul. 17, 1999, 8 participants

社会資本関連環境影響評価

J-99-00574

1. **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.
2. **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.
3. **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
4. **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, Kinki Regional Construction Bureau, MOC (5) Japan Construction Training Center Foundation (JCTC)
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for one week.

EXECUTIVE'S SEMINAR ON PUBLIC WORKS AND MANAGEMENT

Oct. 11, 1999 - Oct. 22, 1999, 8 participants

土木技術マネジメント幹部セミナー

J-99-00587

1. **PURPOSE** This seminar is intended for executive engineers in leading posts to plan and promote public works research and development in Asian countries. The purpose of this seminar is i) to introduce up-to-date information and technology on public works research and development including the comprehensive construction management to the participants with a view to develop their planning and administration abilities on public works, ii) to promote and strengthen human network among Asian countries through attending the seminar and conference.
2. **MAIN FEATURES OF CURRICULUM** This seminar is consist of Country report presentation, lectures, participation in the conference, discussion in the field of public works, and field trips.
3. **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
4. **TRAINING INSTITUTIONS** (1) Tsukuba International Centre (TBIC), JICA (2) Public Works Research Institute, Ministry of Construction
5. **REMARKS**

RIVER AND DAM ENGINEERING II

Aug. 16, 1999 - Nov. 25, 1999, 10 participants

河川及ダム工学II

J-99-00169

1. **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.
2. **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 trips and one week of individual research training in the laboratories. (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.
3. **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 flood control works or water resources developments projects (4) under 40 years of age
4. **TRAINING INSTITUTIONS** (1) Tsukuba International Centre (TBIC), JICA (2) River Bureau, Ministry of Construction (MOC) (3) Public Works Research Institute, MOC
5. **REMARKS** (1) An intensive Japanese language course will be conducted prior to the technical training for one week (25 hours).

CITY PLANNING II

Aug. 16, 1999 - Oct. 17, 1999, 10 participants

都市計画 II

J-99-00027

- 1. 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.
- 2. 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.
- 3. 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
- 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.

URBAN DEVELOPMENT (FOCUSED ON LAND READJUSTMENT MEASURES)

May 11, 1999 - Jul. 4, 1999, 10 participants

都市整備

J-99-00325

- 1. PURPOSE** The purpose of the course is to introduce 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 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 built-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 graduates or equivalents 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 (3) Japan Association of Land Readjustment
- 5. REMARKS** Country Reports will be highly utilized both for the selection of participants and for the country report presentation.

HOUSING POLICY II

no executed in FY 99

住宅政策 II

- 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) The 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

Oct. 28, 1999 - Dec. 12, 1999, 15 participants

住宅・住環境改善セミナー

J-99-00584

- 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 are 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) The Building Center of Japan
- 5. REMARKS**

ARCHITECTURAL ENGINEERING

May 6, 1999 - Jun. 27, 1999, 12 participants

建築技術

J-99-00270

- PURPOSE** The purposes of the course is to provide participants with the latest information and knowledge concerning Japanese architectures and building technology so that participants will be able to play a greater role for further progress and advancement of architectures and building technology in their respective countries.
- 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
- QUALIFICATION OF APPLICANT** (1) officials 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 graduates or equivalents 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
- TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Housing Bureau, Ministry of Construction (3) Building Centre of Japan (BCJ)
- REMARKS** Country Reports will be highly utilized both for the selection of participants and for the Country Report presentation.

SURVEYING AND MAPPING II

Aug. 2, 1999 - Jul. 2, 2000, 8 participants

測量技術 II

J-99-00048

- PURPOSE** This course is designed to upgrade 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 overall 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 and (8) geographical information system
- QUALIFICATION OF APPLICANT** (1) Surveyor currently in charge of surveying or mapping with at least three years of occupational experience (2) University graduate or equivalent (3) Between 25 and 35 years of age
- TRAINING INSTITUTIONS** (1) Tsukuba International Centre (TBIC), 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).

HYDROGRAPHIC SURVEY (INTERNATIONAL ACCREDITED CATEGORY B COURSE)

Apr. 1, 1999 - Nov. 7, 1999, 10 participants

水路測量 (国際認定B級)

J-99-00493

- 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 graduates or equivalents 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 trainings.

OCEANOGRAPHY AND DATA PROCESSING

, 8 participants

海洋調査・データ処理

J-99-00615

- PURPOSE** Purpose of the course is to provide the participants with; (1) skills of effective oceanography survey and preannouncement computational skills based on the result of the survey, (2) technique to enforce and supervise environmental preservation, and (3) data processing and numerical simulation techniques by using a computer.
- MAIN FEATURES OF CURRICULUM** The following subjects will be covered in the course. (1) Lecture and practice on; (a) Ocean ecology (b) Oceanography (c) Ocean survey (d) Coastal survey (e) Remote sensing (f) Numerical analysis (g) Data processing (2) Presentation on country report (3) Field Trip
- QUALIFICATION OF APPLICANT** Applicants should be; (1) surveyors presently in charge of Coastal Oceanography or Data Processing with more than 5 years of experiences. (2) have basic knowledge of computer (3) university graduates or the equivalent, and (4) be under 40 years of age.
- TRAINING INSTITUTIONS** (1) Tokyo International Center (TIC), JICA (2) Hydrographic Department, Marine Safety Agency
- REMARKS** This course is conducted alternately with "Nautical Charting" in every other year. This year (Japanese Fiscal Year 1998), this course will be conducted.

RADIO FREQUENCY MONITORING II

Aug. 19, 1999 - Oct. 9, 1999, 10 participants

電波監視 II

J-99-00180

1. **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.
2. **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
3. **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
4. **TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) International Cooperation Division, Ministry of Posts and Telecommunications
5. **REMARKS**

POSTAL EXECUTIVES' SEMINAR II

Feb. 17, 2000 - Mar. 1, 2000, 12 participants

郵便幹部セミナー II

J-99-00098

1. **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. Through the seminar, participants are expected to: (1) have an important understanding of present situations and problems of postal services in the participating countries, (2) be familiar with planning for development and better utilization of postal infrastructures, and for improvement of quality of postal services in a rapidly changing socioeconomic conditions, and (3) be able to discuss measures to be taken to cope with evolving needs from customers.
2. **MAIN FEATURES OF CURRICULUM** In this seminar, the emphasis is put on introduction of Japanese situations and exchange of views. The General Theme is: Vision of Postal Services: Guaranteed Universal Service and Improve Postal Services. The Individual themes are: (1) Strengthening of Management Foundations Through the Promotion of Automation and Information Technology in Postal Services (2) Provision of More Diversified Services at Post Offices (3) Ideal Marketing for Further Development of Postal Services (4) International Cooperation Concerning Competitive Services Field
3. **QUALIFICATION OF APPLICANT** 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
4. **TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Postal Bureau, Ministry of Posts and Telecommunications (MPT)
5. **REMARKS**

EXECUTIVE'S SEMINAR ON POSTAL SAVINGS SERVICES

Jan. 16, 2000 - Jan. 30, 2000, 8 participants

郵便貯金国際幹部セミナー

J-99-00403

1. **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 environments 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. Through the seminar, participants are expected: (1) to deepen the understanding of Japanese postal savings services and recognize the current situations of participating countries' postal savings services, and (2) to study and discuss overall aspects of each country's postal savings service, thus to find problems and the cue of their solutions
2. **MAIN FEATURES OF CURRICULUM** In this seminar, the emphasis is put on introduction of Japanese situations and exchange of views. (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 (1) Lectures and Participants' presentation and discussion on the following theme: (a) General Introduction to Japanese Postal Savings (b) Japan's Financial System & Public Sector Financing (c) Management of Japanese Postal Savings Services (d) Fund Management (e) Mechanization of Postal Savings Service (f) Sales Promotion Activities (g) Product Development (h) International Business (i) International Cooperation Activities of MPT (2) Observation tour to the related facilities
3. **QUALIFICATION OF APPLICANT** director or high-ranking official of savings organizations (Postal Savings Organization or, national/governmental Savings Bank) or Postal Money Order and Postal Giro Organization
4. **TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Ministry of Posts and Telecommunications
5. **REMARKS**

INTERNATIONAL TELECOMMUNICATION SERVICES (ADMINISTRATION AND COMMERCIAL) II

May 11, 1999 - Jul. 17, 1999, 11 participants

国際通信業務管理 II

J-99-00024

1. **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.
2. **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.
3. **QUALIFICATION OF APPLICANT** (1) university graduates or equivalents 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
4. **TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Kokusai Denshin Denwa Co., Ltd. (KDD) (3) KDD Engineering and Consulting Inc. (KEC)
5. **REMARKS**

TELECOMMUNICATIONS EXECUTIVE'S SEMINAR II

May 25, 1999 - Jun. 9, 1999, 11 participants

電気通信幹部セミナー II

J-99-00064

- 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-Generals or equivalents 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) Ministry of Posts and Telecommunications
- REMARKS**

NETWORK BASIC ENGINEERING COURSE

May 18, 1999 - Jul. 1, 1999, 12 participants

通信網基本技術(交換技術者)

J-99-00592

- 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.
- MAIN FEATURES OF CURRICULUM** In this course, major technical aspects related to a telecommunications network will be discussed. The 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.
- QUALIFICATION OF APPLICANT** (1) university graduates specializing in telecommunications and/or electrical engineering or equivalent (2) under 40 years of age (3) working for common career organizations with at least five years of practical experience on their own switching systems
- TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Central Training Institute (CTI), Nippon Telegraph and Telephone Corporation (NTT)
- REMARKS**

INTERNATIONAL DATA ENGINEERING AND APPLICATIONS

Aug. 31, 1999 - Oct. 23, 1999, 11 participants

国際データ応用技術

J-99-00267

- 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).
- 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 Systems (software, packet switching, frame relay, ISDN, MHS, multimedia application, private link network, internet) (3) Transmission Systems (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)
- 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
- TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Kokusai Denshin Denwa Co., Ltd. (KDD) (3) KDD Engineering and Consulting Inc. (KEC)
- REMARKS**

FIBER OPTIC OUTSIDE PLANT ENGINEERING

Jan. 10, 2000 - Mar. 20, 2000, 10 participants

光線路技術

J-99-00333

- 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.
- 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
- 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
- TRAINING INSTITUTIONS** (1) Nagoya International Training Centre (NITC), JICA (2) Suzuka Training Institute, NTT
- REMARKS** A compulsory intensive Japanese language course will be conducted along with the technical training for 25 hours.

**DIGITAL TRANSMISSION SYSTEMS
ENGINEERING**

Sep. 20, 1999 - Dec. 6, 1999, 12 participants

デジタル伝送技術

J-99-00344

- 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 (25 hours).

**TELECOMMUNICATION OUTSIDE PLANT
ENGINEERING TECHNIQUES**

Aug. 9, 1999 - Dec. 4, 1999, 10 participants

通信線路技術者育成

J-99-00616

- 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**

Aug. 31, 1999 - Oct. 23, 1999, 11 participants

国際ISDN応用技術

J-99-00457

- 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)
- 5. REMARKS**

RURAL TELECOMMUNICATION ENGINEERING

Feb. 7, 2000 - Mar. 15, 2000, 10 participants

ル-ラル通信技術

J-99-00458

- 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)
- 5. REMARKS**

**INTEGRATED SERVICES DIGITAL NETWORK
BASIC ENGINEERING**

Jan. 11, 2000 - Feb. 19, 2000, 12 participants

ISDN基礎技術

J-99-00500

- 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)
- 5. REMARKS**

**SEMINAR ON TELECOMMUNICATIONS
MANAGEMENT**

Oct. 11, 1999 - Oct. 29, 1999, 10 participants

電気通信経営管理セミナー

J-99-00507

- 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) Central Training Institute (CTI), Nippon Telegraph and Telephone Corporation (NTT)
- 5. REMARKS**

**DIGITAL TELECOMMUNICATION NETWORK
PLANNING AND DESIGNING**

Sep. 28, 1999 - Nov. 19, 1999, 10 participants

デジタル通信網計画設計

J-99-00508

- 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)
- 5. REMARKS**

**TRAINING COURSE ON TELECOMMUNICATION
NETWORK PLANNING PRACTICE**

Sep. 28, 1999 - Dec. 18, 1999, 5 participants

通信網計画設計者養成

J-99-00608

- 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 (4) Practical Design based on the real data in respective countries.
- 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)
- 5. REMARKS**

SATELLITE COMMUNICATION ENGINEERING II

May 11, 1999 - Jul. 17, 1999, 11 participants

衛星通信技術 II

J-99-00699

- 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 graduates 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)
- 5. REMARKS**

BROADCASTING EXECUTIVE'S SEMINAR II

Oct. 17, 1999 - Oct. 31, 1999, 9 participants

放送幹部セミナー II

J-99-00139

- 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
- 5. REMARKS**

AUDIO BROADCASTING ENGINEERING II

Jan. 6, 2000 - Mar. 13, 2000, 10 participants

音声放送技術 II

J-99-00609

- 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 practices 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
- 5. REMARKS**

TELEVISION PROGRAMME PRODUCTION

Jul. 6, 1999 - Sep. 17, 1999, 10 participants

テレビジョン番組制作

J-99-00496

- 1. PURPOSE** Producers and programme directors working for broadcasting stations in participating countries will be given opportunities 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
- 5. REMARKS**

TELEVISION ENGINEERING II

Jun. 29, 1999 - Sep. 17, 1999, 10 participants

テレビジョン放送技術 II

J-99-00577

- 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.
- 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 practices. Field trainings in small groups are organized to enhance the programme.
- QUALIFICATION OF APPLICANT** (1) engineers serving in a broadcasting organization with practical experience of three to five years in TV engineering (2) university/college graduates or equivalents in electronic engineering
- TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) NHK Communications Training Institute
- REMARKS**

TELEVISION SOCIAL EDUCATION PROGRAMME II

Jan. 20, 2000 - Mar. 13, 2000, 10 participants

テレビジョン社会教育番組 II

J-99-00198

- 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.
- 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
- 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
- TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) NHK Communications Training Institute
- REMARKS**

AGRICULTURAL COOPERATIVES II

May 4, 1999 - Jul. 4, 1999, 16 participants

農業協同組合 II

J-99-00007

- PURPOSE** The purpose of this course is to provide participants engaged in the agricultural cooperative development with necessary information and knowledge 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) Hachioji International Training Centre (HITC), JICA (2) Institute for Development of Agricultural Cooperation in Asia (IDACA)
- REMARKS**

AGRICULTURAL EXTENSION SERVICE FOR LEADER II

May 6, 1999 - Jul. 18, 1999, 12 participants

農業普及指導者 II

J-99-00008

- 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 agricultural extension workers 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
- REMARKS**

VEGETABLE CULTIVATION TECHNOLOGY FOR EXTENSION

Feb. 7, 2000 - Nov. 15, 2000, 9 participants

野菜栽培技術

J-99-00631

- 1. PURPOSE** The purpose of this course is to bring up agricultural engineers on vegetable production having a broad viewpoint and scientific knowledge in theory and technique, through lectures on specialized subjects, experiments and practices on major vegetables and various study tours, so that they can modify these technologies they have acquired and extend them to the respective country.
- 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 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) seed technology on sorting, drying, storage and germinating of vegetable seeds.
- 3. 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 specialty (3) between 25 and 40 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)

PLANT GENETIC RESOURCES

May 3, 1999 - Oct. 29, 1999, 6 participants

植物遺伝資源

J-99-00275

- 1. 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.
- 2. 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) Gene bank management and operations
- 3. 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
- 4. TRAINING INSTITUTIONS** (1) Tsukuba International Centre (TBIC), JICA (2) National Institute of Agrobiological Resources (NIAR)
- 5. 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. 7, 2000 - Nov. 12, 2000, 6 participants

稲研究

J-99-00291

- 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 to 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).

SUGAR CANE RESEARCH

Aug. 26, 1999 - Jan. 31, 2000, 5 participants

サトウキビ研究

J-99-00322

- 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 one month.
- 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. 15, 1999 - Nov. 21, 1999, 5 participants

熱帯農林資源の有効利用

J-99-00326

- 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.
- 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.
- QUALIFICATION OF APPLICANT** (1) have more than three years of laboratory research experience (2) presently engaged in research work (3) university graduates or equivalent (4) under 36 years of age
- TRAINING INSTITUTIONS** (1) Okinawa International Centre (OIC), JICA (2) College of Agriculture, University of the Ryukyus
- REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for six weeks (130 hours).

RURAL WOMEN EMPOWERMENT

Oct. 12, 1999 - Dec. 10, 1999, 12 participants

農村女性能力向上

J-99-00625

- PURPOSE** Introduce the methods to support activities of women who are in charge of the women's issue in governments and Subject Matter Specialist by giving instances, thus contribute to the regional development in which the role of women in each country is specified.
- MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on lectures, practice and field trips. The main themes are: (1) the current situation of rural policy, (2) methods to promote the rural development, (3) examples of regional development in which women's role is specified, (4) training of leaders for the efficient development by empowering women who are playing a central role in rural region.
- QUALIFICATION OF APPLICANT** (1) Subject Matter Specialist engage in home living improvement and rural development, person in charge of women's issue in government, which are engaged in the improvement of rural living standards of farm household by developing women's abilities through planning and execution of instruction and training, through the training program how to know the various methods about efforts to raise the status of rural women, participants are expected to be able to understand the importance of participatory development processes include the focus of WID and gender issue, (2) university graduate or equivalent, (3) from 25 to 45 years old.
- TRAINING INSTITUTIONS** (1) Tsukuba International Centre (TBIC), JICA (2) Training Institute for Rural Life Improvement, Ministry of Agriculture, Forestry and Fisheries, (3) Rural Empowerment and Life Improvement and Life Improvement Association
- REMARKS**

PLANT QUARANTINE (DISINFESTATION OF FRUIT FLIES)

Apr. 15, 1999 - Sep. 11, 1999, 5 participants

植物検疫(ミバエ類害虫技術)

J-99-00407

- 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 fruit 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 fly by vapor heat treatment and cold treatment (8) eradication of fruit flies
- QUALIFICATION OF APPLICANT** (1) being presently engaged in the disinfestation programme of fruit flies or will be engaged in it as a technical expert (2) university graduate or equivalent (3) having experience in plant quarantine works and having sufficient knowledge about pests such as fruit flies (4) being under 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 DIAGNOSIS AND ENVIRONMENTAL CONSERVATION

May 16, 1999 - Aug. 21, 1999, 7 participants

土壌診断環境保全

J-99-00595

- 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 sustainable agriculture.
- 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 (4) be in good health and able to undergo the training (5) not be serving military
- TRAINING INSTITUTIONS** (1) Northern Regions Center (NRC) (2) Obihiro University of Agriculture and Veterinary Medicine (3) Obihiro City
- REMARKS**

DISTRIBUTION OF FRESH FRUITS AND VEGETABLES

Aug. 30, 1999 - Nov. 12, 1999, 7 participants

青果物流通

J-99-00184

- 1. 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.
- 2. 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
- 3. 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
- 4. TRAINING INSTITUTIONS** (1) Osaka International Centre (OSIC), JICA (2) Osaka Municipal Central Wholesale Market
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks.

INTEGRATED PEST MANAGEMENT FOR PLANT PROTECTION

May 31, 1999 - Sep. 12, 1999, 7 participants

植物保護のための総合防除

J-99-00503

- 1. 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 field.
- 2. 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: field survey
- 3. 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 graduates (3) above 26 and under 35 years of age
- 4. TRAINING INSTITUTIONS** (1) Hyogo International Centre (HIC), JICA (2) Department of Biological & Environmental Science, Faculty of Agriculture, Kobe University
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for 8 days (40 hours).

STATISTICAL INFORMATION SYSTEM FOR AGRICULTURE

Jul. 6, 1999 - Sep. 19, 1999, 8 participants

農業統計情報システム

J-99-00568

- 1. 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.
- 2. 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
- 3. QUALIFICATION OF APPLICANT** (1) government official engaged in planning and administration of agricultural statistics (excluding forestry and fishery statistics) (2) university graduate or equivalent (3) not more than 40 years of age
- 4. 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
- 5. REMARKS**

INTRODUCTORY GENE MANIPULATION FOR AGRICULTURE

Jul. 26, 1999 - Dec. 12, 1999, 8 participants

農業生産のための遺伝子操作技術

J-99-00576

- 1. 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.
- 2. 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
- 3. QUALIFICATION OF APPLICANT** (1) university graduate or equivalent (except those 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
- 4. TRAINING INSTITUTIONS** (1) Osaka International Centre (OSIC), JICA, (2) College of Agriculture, Osaka Prefecture University
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks.

**AGRICULTURAL AND RURAL DEVELOPMENT
WITH ENVIRONMENTAL CONSERVATION**

Sep. 13, 1999 - Dec. 1, 1999, 15 participants

農業・農村開発環境保全

J-99-00174

- 1. 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.
- 2. 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
- 3. 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
- 4. TRAINING INSTITUTIONS** (1) Tsukuba International Centre (TBIC), JICA (2) The Japanese Institute of Irrigation and Drainage (JID) (3) Agricultural Structure Improvement Bureau, Ministry of Agriculture, Forestry and Fisheries
- 5. REMARKS**

IRRIGATION AND DRAINAGE II

Feb. 7, 2000 - Nov. 17, 2000, 11 participants

灌漑排水 II

J-99-00093

- 1. 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.
- 2. 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
- 3. 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
- 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 (60 hours).

**AGRICULTURAL LAND AND WATER
RESOURCES DEVELOPMENT II**

May 25, 1999 - Jul. 18, 1999, 15 participants

農地水資源開発 II

J-99-00159

- 1. 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).
- 2. 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
- 3. 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 seven (7) years of occupational experience in this field (2) under 45 years of age (3) university graduate or equivalent
- 4. TRAINING INSTITUTIONS** (1) Tsukuba International Centre (TBIC), JICA (2) The Japanese Institute of Irrigation and Drainage (JID) (3) Agricultural Structure Improvement Bureau, Ministry of Agriculture, Forestry and Fisheries
- 5. REMARKS**

IRRIGATION WATER MANAGEMENT

May 24, 1999 - Nov. 19, 1999, 9 participants

水管理

J-99-00348

- 1. 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.
- 2. 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.
- 3. 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.
- 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 30 hours.

AGRICULTURAL IMPROVEMENT IN UPLAND CROPS AREA

Jun. 6, 1999 - Aug. 26, 1999, 5 participants

畑地帯における農業開発

J-99-00605

- 1. PURPOSE** This course is designed for specialists and civil engineers engaged in agricultural and rural improvement projects. The participants will be expected to learn civil engineering methods (e.g. planning and implementation techniques) related to the improvement of agricultural production infrastructure, through the study of relevant projects, such as the construction of dams for agriculture, irrigation and drainage systems, etc. This course is also designed to deepen knowledge of agricultural and rural improvement projects aimed at maintaining a stable food supply, based on case studies of past projects.
- 2. MAIN FEATURES OF CURRICULUM** This course will emphasize field observations in the Obihiro-Tokachi area (Hokkaido, Japan), which is regarded as one of the major sites of large-scale upland and dairy farming operations in Japan. It mainly covers the following subjects: (1) general systems of project implementation and civil engineering related to agricultural production infrastructure improvement projects, (2) civil engineering technology focused on dam construction projects for agriculture and on irrigation and drainage systems, (3) methods of improving the living environment in rural areas.
- 3. QUALIFICATION OF APPLICANT** (1) be technical engineers with expertise in agricultural improvement projects, especially in agricultural-use dam construction projects and in irrigation and drainage systems for upland farming (2) have more than three years of practical experience (3) be at least 25 and no more than 45 years of age (4) be a university graduate or equivalent (5) be in good health and able to undergo the training (6) not be serving military
- 4. TRAINING INSTITUTIONS** (1) Northern Regions Center, (NRC) (2) Obihiro Development and Construction Department, Hokkaido Development Bureau
- 5. REMARKS**

FARM MACHINERY DESIGN

Feb. 7, 2000 - Oct. 22, 2000, 10 participants

農業機械設計

J-99-00276

- 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 in the annual meeting of Japanese Society of Agricultural Machinery and some have a presentation of technical report after screening.

FARM MECHANIZATION II

Feb. 14, 2000 - Nov. 10, 2000, 10 participants

農業機械化 II

J-99-00050

- 1. 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.
- 2. 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.
- 3. 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
- 4. TRAINING INSTITUTIONS** Tsukuba International Centre (TBIC), JICA
- 5. REMARKS** During training period, the participants are: (1) to join in the annual meeting of Japanese Society of Agricultural Machinery and some have a presentation of technical report after screening (2) to stay at a Japanese farm house for the farm-household practice.

AGRICULTURAL MACHINERY MANAGEMENT

Apr. 26, 1999 - Oct. 31, 1999, 10 participants

農業機械管理

J-99-00433

- 1. PURPOSE** This course is designed for leading agricultural engineers in the field of agricultural machinery management 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 28 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. 21, 2000 - Jun. 25, 2000, 10 participants

農業機械評価試験

J-99-00146

- 1. PURPOSE** The purpose of this course is to systematically introduce the knowledge and techniques required for the testing and evaluation of farm machinery.
- 2. MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on the actual testing and evaluating methodology of farm machinery. The actual testing practices are conducted under the authorized testing cord. The main themes are: (1) testing and evaluation of farm 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) farm machinery testing system and administration (6) farm 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 farm 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)
- 5. REMARKS** (1) A compulsory intensive Japanese language course is conducted prior to the technical training for 10 days (30 hours). (2) During training period, the participants are to join in the annual meeting of Japanese Society of Agricultural Machinery.

POST-HARVEST RICE PROCESSING

Aug. 31, 1999 - Nov. 19, 1999, 10 participants

米の収穫後処理技術

J-99-00514

- 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, such as 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 broken)
- 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 to 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) Food Agency, Ministry of Agriculture, Forestry and Fisheries
- 5. REMARKS**

POULTRY PRODUCTION AND BREEDING TECHNOLOGY

Aug. 9, 1999 - Dec. 5, 1999, 9 participants

鶏育種・生産技術

J-99-00061

- 1. 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.
- 2. 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
- 3. 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 (6) be in good health to undergo the training course. Pregnancy is regarded as a disqualifying condition (7) not be serving in the military
- 4. TRAINING INSTITUTIONS** (1) Nihonmatsu Training Centre, JICA (2) National Livestock Breeding Centre, Ministry of Agriculture, Forestry and Fisheries
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for 3 weeks.

BREEDING AND ARTIFICIAL INSEMINATION IN CATTLE

May 2, 1999 - Aug. 22, 1999, 8 participants

牛育種・人工授精

J-99-00494

- 1. 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.
- 2. 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
- 3. 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
- 4. TRAINING INSTITUTIONS** (1) Nihonmatsu Training Centre, JICA (2) National Livestock Breeding Center, Ministry of Agriculture, Forestry and Fisheries
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for 3 weeks.

SWINE PRODUCTION AND BREEDING TECHNOLOGY

Jan. 3, 2000 - Apr. 30, 2000, 6 participants

豚育種・生産技術

J-99-00588

- 1. 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.
- 2. 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
- 3. 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
- 4. TRAINING INSTITUTIONS** (1) Nihonmatsu Training Centre, JICA (2) National Livestock Breeding Center, Ministry of Agriculture, Forestry and Fisheries (MAFF)
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for 3 weeks.

EMBRYO TRANSFER TECHNOLOGY FOR CATTLE

Aug. 9, 1999 - Dec. 5, 1999, 8 participants

牛受精卵移植技術

J-99-00582

- 1. 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.
- 2. 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
- 3. 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
- 4. TRAINING INSTITUTIONS** (1) Nihonmatsu Training Centre, JICA (2) National Livestock Breeding Center, Ministry of Agriculture, Forestry and Fisheries
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for 3 weeks.

DAIRY FARMING AND RELATED TECHNIQUES

Aug. 16, 1999 - Nov. 5, 1999, 7 participants

酪農振興・検査技術

J-99-00334

- 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
- 5. REMARKS**

FOREST SOILS

Jul. 22, 1999 - Nov. 28, 1999, 6 participants

森林土壌

J-99-00335

- 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) working in a forestry research organization or university with more than five years of occupational experience in forest soil research (2) university graduate or equivalent (3) 40 years of age or younger
- 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. 9, 1999 - Nov. 7, 1999, 15 participants

森林管理計画

J-99-00445

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 (FTI), 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. 16, 1999 - Nov. 20, 1999, 5 participants

森林研究

J-99-00501

1. **PURPOSE** The course is designed to upgrade 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 comprises three sub-courses; "Forest", "Forestry" and "Forest Products". Each sub-course is conducted every three years. This year (Japanese Fiscal Year 1999), the sub-course "Forestry" 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 20 subjects in the field of (1) Forest genetics, (2) Molecular and Cell Biology, (3) Silviculture (4) Forest Operation, (5) Forest Machinery, (6) Resources management or, (7) Policy and Economics, for their individual research.
3. **QUALIFICATION OF APPLICANT** (1) University/college graduate or equivalent with at least five years' occupational experience 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 one week (25 hours).

**CONSERVATION AND SUSTAINABLE USE
FOREST BIOLOGICAL DIVERSITY**

Jan. 4, 2000 - Feb. 17, 2000, 7 participants

森林保護地域等の管理・経営

J-99-00627

1. **PURPOSE**
2. **MAIN FEATURES OF CURRICULUM**
3. **QUALIFICATION OF APPLICANT**
4. **TRAINING INSTITUTIONS**
5. **REMARKS**

FISHING GEAR DEVELOPMENT AND DESIGN

Sep. 6, 1999 - Dec. 12, 1999, 7 participants

漁具開発設計

J-99-00215

1. **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.
2. **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
3. **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
4. **TRAINING INSTITUTIONS** Kanagawa International Fisheries Training Centre (KIFTC), JICA
5. **REMARKS**

MARINE AND BRACKISH AQUACULTURE

Jun. 29, 1999 - Nov. 7, 1999, 6 participants

海水養殖

J-99-00591

- PURPOSE** The course is designed to upgrade basic knowledge and technique of marine and brackish 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.
- 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, education or research work with more than three 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.

FRESHWATER AQUACULTURE

Mar. 20, 2000 - Jul. 16, 2000, 6 participants

淡水養殖

J-99-00610

- PURPOSE** Upon successful completion of the course, participants are expected to have: (1) obtained basic scientific knowledge of freshwater aquaculture, (2) obtained basic technique of freshwater aquaculture, and to be able to: (3) improve management system of fish farming, and (4) obtain ideas for sound aquaculture developments.
- MAIN FEATURES OF CURRICULUM** The subjects covered in the course are ichthyology, genetics, physiology, histology, pathology, nutrition requirement, water quality management, biostatistics, seed production, food organisms culture, formula food manufacture, digestibility analysis and water quality analysis. The course includes lecture, practice, observation and report making.
- QUALIFICATION OF APPLICANT** (1) person presently engaged in aquacultural extension, education or research work with more than three years' experience in this field (2) university graduate or equivalent (3) under 35 years of age
- TRAINING INSTITUTIONS** (1) Kanagawa International Fisheries Training Centre (KIFTC), JICA (2) Saitama Prefectural Fisheries Experimental Station
- REMARKS** A two week compulsory intensive Japanese language course (total 50 hours) will be conducted prior to the technical training.

MECHANICAL MAINTENANCE FOR SMALL SCALE FISHERIES

Jan. 10, 2000 - May 21, 2000, 8 participants

小型漁船の機関保守

J-99-00277

- 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 10, 1999 - Sep. 30, 1999, 7 participants

資源管理型漁業

J-99-00336

- 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
- REMARKS**

FISH PATHOLOGY AND ENVIRONMENTAL MANAGEMENT OF AQUACULTURE

Aug. 23, 1999 - Nov. 28, 1999, 5 participants

魚類防疫・環境管理

J-99-00351

- 1. 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.
- 2. 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.
- 3. 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.
- 4. TRAINING INSTITUTIONS** (1) Kyushu International Centre (KIC), JICA (2) National Fisheries University, Ministry of Agriculture, Fisheries and Forestry
- 5. REMARKS** (1) A compulsory 25-hour Japanese language course will be conducted prior to the technical training.

COASTAL FISHING TECHNIQUE FOR SUSTAINABLE RESOURCE USE

Mar. 13, 2000 - Jul. 9, 2000, 5 participants

持続的資源利用のための沿岸漁業

J-99-00432

- 1. PURPOSE** Upon successful completion of the programme, participants are expected to have: (1) obtained basic theory of fishing gear and method, (2) obtained basic technique of small scale coastal fishing, and to be able to: (3) design, make, use and disseminate appropriate fishing gear, (4) develop fishing system which ensures sustainable resource use.
- 2. MAIN FEATURES OF CURRICULUM** 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. The course includes series of lectures, practice and observations.
- 3. QUALIFICATION OF APPLICANT** (1) senior high school graduate or equivalent (2) more than three years' occupational experience in coastal fisheries (3) less than 35 years of age.
- 4. TRAINING INSTITUTIONS** (1) Kanagawa International Fisheries Training Centre (KIIFTC), JICA (2) Kagoshima University
- 5. REMARKS** A compulsory intensive Japanese language course (total 12 hours) will be conducted after lectures in the evening.

SEMINAR ON FISHERIES DEVELOPMENT PLANNING

Jan. 10, 2000 - Mar. 5, 2000, 10 participants

水産開発セミナー

J-99-00518

- 1. PURPOSE** The seminar is designed to upgrade the planning capabilities of participants who are involved in fisheries development planning.
- 2. 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".
- 3. 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
- 4. TRAINING INSTITUTIONS** Kanagawa International Fisheries Training Centre (KIIFTC), JICA
- 5. REMARKS**

FISHERIES MANAGEMENT AND COOPERATIVES

Jul. 5, 1999 - Oct. 17, 1999, 10 participants

漁業協同組合

J-99-00520

- 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 staff (members) 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 (KIIFTC), JICA
- 5. REMARKS** A two week compulsory intensive Japanese language course (total 50 hours) will be conducted prior to practical training.

HANDLING AND PRIMARY PROCESSING OF FISHERY PRODUCTS

Jun. 1, 1999 - Sep. 5, 1999, 8 participants

漁獲物処理

J-99-00515

- 1. PURPOSE** The purpose of the course is to provide practical knowledge required by the leading technical officials who are presently engaged in the technology development of fish handling and processing. The course is comprised of lectures, practices as well as demonstrations arranged by universities 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) high school 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

Sep. 6, 1999 - Dec. 19, 1999, 8 participants

水産食品品質保証

J-99-00517

- 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 TECHNOLOGY

Aug. 23, 1999 - Nov. 21, 1999, 12 participants

石炭鉱山技術

J-99-00601

- 1. PURPOSE** The course is designed to introduce practical technology and knowledge in the field of coal mine technology (mainly for underground mines) to the participants, who are safe or production engineers at coal mines so that they can play important roles in contributing to the expansion and development of the coal mine industries.
- 2. MAIN FEATURES OF CURRICULUM** This course consists of (1) safety (2) production (3) on site training at coal mine (4) theoretical studies.
- 3. QUALIFICATION OF APPLICANT** (1) mining engineers (safety, production) presently engaged in the field of coal mine (2) university graduate or equivalent with basic knowledge of coal mine with occupational experience of more than three years (3) more than 30 years and less than 40 years of age
- 4. TRAINING INSTITUTIONS** (1) Tsukuba International Centre (TBIC), JICA (2) Japan Coal Energy Center (JCOAL) (3) National Institute for Resources and Environment (NIRE), Agency of Industrial Science and Technology, Ministry of International Trade and Industry
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for a week (20 hours).

SUSTAINABLE MINERAL DEVELOPMENT

Jul. 26, 1999 - Nov. 18, 1999, 20 participants

環境調和型鉱業開発

J-99-00602

- 1. PURPOSE** The purpose of the course is to enable the participants: (1) to deepen the knowledge of mining and environmental technology for sustainable mineral development through lectures, practices and field trips, and (2) to enhance the knowledge and technology necessary for their mining business and environmental issues after going back to their respective countries.
- 2. MAIN FEATURES OF CURRICULUM** This course consists of lectures, practices and field trips. Participants will be divided into three groups in the following fields: (1) Exploration (2) Mining (3) Mineral processing and Metallurgy
- 3. QUALIFICATION OF APPLICANT** (1) university/college graduates or equivalent who have basic knowledge of mineral mining (2) mining geologist, mining engineer, milling engineer, metallurgist or 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) be proficient in spoken and written English (5) under approximately 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.

SENIOR CLASS SEMINAR ON SMALL INDUSTRY DEVELOPMENT II

Jun. 14, 1999 - Jul. 5, 1999, 12 participants

中小工業開発セミナー II

J-99-00074

- 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
- 5. REMARKS**

IMPLEMENTATION OF TQM AND STANDARDIZATION ACTIVITIES II

Jun. 22, 1999 - Sep. 2, 1999, 10 participants

TQM-標準化活動実践 II

J-99-00105

- 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 TQM 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 TQM 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 TQM and Standardization (2) the techniques for solving quality problems and the methods of managing a TQM organization in actual use. (3) the team study to understand how to solve problems through the TQM 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 offices, public corporations, public or private institutes, or private companies. (2) under 40 years of age (3) university graduates or equivalents
- 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.

IMPLEMENTATION OF CONFORMITY ASSESSMENT FOR INDUSTRY

Jan. 18, 2000 - Mar. 12, 2000, 10 participants

適合性評価実践(工業分野)

J-99-00623

- 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.

ADMINISTRATION OF INTELLECTUAL PROPERTY

Jun. 1, 1999 - Jul. 3, 1999, 8 participants

工業所有権行政

J-99-00261

- 1. PURPOSE** The purpose of this course is to offer an opportunity to reconfirm the importance of Intellectual and Industrial Property (IP) Systems 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 technological development in Japan (3) further development of IP system management 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 graduates or equivalents (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).

LEGAL METROLOGY

Jul. 12, 1999 - Dec. 12, 1999, 6 participants

法定計量

J-99-00513

- PURPOSE** This course is organized for government officers working as senior verification officers responsible for verification and inspection of measuring equipment in the field of legal metrology. It will serve as a good opportunity to upgrade the level of 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. (I) technical training (16 weeks) (a) legal metrology in general (i) 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) Currently engaged in legal metrology at governmental or semi-governmental institute with at least three years' occupational experience in this field. Researchers are excluded. (2) University graduate or equivalent. (3) Between 30 and 45 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 (TMIWM)
- REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks (50 hours).

INDUSTRIAL BIOTECHNOLOGY

Jul. 26, 1999 - May 21, 2000, 5 participants

生命工学研究

J-99-00285

- PURPOSE** The course is designed for researchers presently engaged in biotechnology in their countries. Through laboratory work, basic knowledge and techniques in biotechnology and bioscience will be acquired and the ability to carry out research activities considered to be necessary for the industrial development in their own countries will be cultivated.
- MAIN FEATURES OF CURRICULUM** This course consists of individual training (9 months) in the laboratories. Each participant is to choose one out of the following nine subjects for their individual research after 1-week General Orientation and 2-week Japanese Language Training (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 presently engaged in research work in the field have of biotechnology, (2) have occupational experience of more than three years in the said field after graduation of master's course or have occupational experience of more than five years after graduation of bachelor's course. Administrative officers are not qualified for this course (3) between 25 and 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

Aug. 9, 1999 - May 28, 2000, 5 participants

物質工学研究

J-99-00268

- PURPOSE** The course is designed for researchers of national research and educational institutions in participating countries, and provides the opportunity to study research methods and gain related knowledge through research on specialized themes selected by the participants themselves, and through introductory lectures. Field trips scheduled in the programme serve 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) Currently engaged in research work in the field of polymer and chemical technology, and at least three years' occupational experience in the appropriate field. Administrative officers are not qualified for this course. (3) Between 25 and 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 24, 1999 - Nov. 25, 1999, 8 participants

触媒科学研究

J-99-00337

- 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
- REMARKS**

BIOINDUSTRIES

May 17, 1999 - Jul. 12, 1999, 8 participants

バイオインダストリー

J-99-00357

- PURPOSE** The course aims at providing with recent and practical knowledge on bioindustry.
- 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, Primate (5) Administrative Policy, Safety and Intellectual Proprietary rights of Products; New Policy for Biochemical Industry, Safety of Products, Patents
- 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
- TRAINING INSTITUTIONS** (1) Nagoya International Training Centre (NITC), JICA (2) Japan Bioindustry Association (JBA) (3) public institutes, universities, industries
- REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for one week (25 hours).

FINE CERAMICS APPLICATION

May 10, 1999 - Jul. 26, 1999, 7 participants

機能性無機材料の開発応用

J-99-00603

- 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.
- 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
- 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
- TRAINING INSTITUTIONS** (1) Nagoya International Training Centre (NITC), JICA (2) Japan Fine Ceramics Center (JFCC)
- REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for one week (25 hours).

ADVANCED MATERIALS

Jan. 17, 2000 - Sep. 17, 2000, 6 participants

先進材料

J-99-00443

- PURPOSE** Course participants, who are 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 higher level. The course aims 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.
- MAIN FEATURES OF CURRICULUM** This course consists of common subjects for all participants and individual research workers 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
- 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
- TRAINING INSTITUTIONS** (1) Osaka International Centre (OSIC), JICA (2) Osaka National Research Institute (ONRI)
- REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for four weeks.

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

May 10, 1999 - Sep. 6, 1999, 5 participants

表面改質技術(金属・非金属・新素材及び防蝕) II J-99-00066

- 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.
- 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.
- 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
- TRAINING INSTITUTIONS** (1) Nagoya International Training Centre (NITC), JICA (2) Industrial Research Institute, Aichi Prefectural Government (3) Aichi Industrial Research Association (AIRA) (4) private industries and other institutes
- REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks (50hours).

STEEL PROPERTIES AND ITS APPLICATIONS

May 31, 1999 - Oct. 9, 1999, 9 participants

鋼材の加工と加工特性

J-99-00256

- 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 five 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) 37 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. 12, 1999 - Jul. 5, 1999, 8 participants

熱処理技術

J-99-00260

- 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) Aichi Industrial Research Association (AIRA) (3) Industrial Research Institute, Aichi Prefectural Government (4) National Industrial Research Institute of Nagoya (NIRIN)
- 5. REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for one week (25 hours).

MAINTENANCE OF CONSTRUCTION MACHINERY II

May 11, 1999 - Aug. 8, 1999, 8 participants

建設機械整備 II

J-99-00162

- 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 graduates in mechanical engineering or equivalents 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

Aug. 30, 1999 - Jan. 31, 2000, 6 participants

金属加工高品質化技術 II

J-99-00175

- 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 (50 hours).

AUTOMATIC CONTROL (GENERAL INTRODUCTION)

Jul. 5, 1999 - Nov. 26, 1999, 7 participants

自動制御(基礎)

J-99-00310

- 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) sequence control (8) industrial electric control system
- QUALIFICATION OF APPLICANT** (1) Engineers with more than four years of occupational experience in the field of planning, production and maintenance 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.

PLANT MAINTENANCE MANAGEMENT

Jan. 10, 2000 - May 13, 2000, 9 participants

生産設備の保全管理

J-99-00629

- 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 Japanese language course will be conducted prior to technical training.

MACHINE CONDITION DIAGNOSIS TECHNIQUES

Jun. 21, 1999 - Oct. 17, 1999, 8 participants

設備診断技術

J-99-00338

- 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 five years of maintenance experience (2) more than one year of experience in computer operation (3) university graduate or equivalent in engineering (4) under 40 years of age
- 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.

SHIP SAFETY AND MARINE POLLUTION PREVENTION IMPLEMENTATION OF THE INTERNATIONAL CONVENTIONS

Jan. 10, 2000 - Dec. 3, 2000, 20 participants

船舶安全・海洋汚染防止

J-99-00464

- 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/IO conventions, and thus to contribute globally to ship safety and marine pollution prevention.
- 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.
- QUALIFICATION OF APPLICANT** (1) applicants should be one of the followings: (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/lecturers, 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.
- TRAINING INSTITUTIONS** (1) Kanagawa International Fisheries Training Centre (KIIFTC), JICA (2) Maritime Technology and Safety Bureau, Ministry of Transport (3) Overseas Shipbuilding Cooperation Centre (OSCC)
- 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 17, 1999 - Jul. 11, 1999, 12 participants

自動車の安全・公害対策技術

J-99-00475

- 1. 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 in automobile production and repair work.
- 2. 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.
- 3. 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 or equivalent (3) Between 25 and 40 years of age
- 4. TRAINING INSTITUTIONS** (1) Tsukuba International Centre (TBIC), JICA (2) Japan Automobile Research Institute (JARI)
- 5. REMARKS**

INDUSTRIAL POLLUTION CONTROL RESEARCH

Jul. 12, 1999 - Nov. 7, 1999, 6 participants

産業公害防止

J-99-00363

- 1. 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.
- 2. 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.
- 3. QUALIFICATION OF APPLICANT** (1) Scientist or researcher in the field of pollution control technology with at least three years' of occupational experience. Administrative officers are not qualified for this course (2) University graduate or equivalent (3) Knowledge of computer programming with FORTRAN or BASIC language in the course of simulation technology (4) Under 40 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 Trade and Industry.
- 5. REMARKS**

RENOVATION OF INDUSTRIAL EQUIPMENT

Feb. 14, 2000 - Jul. 2, 2000, 9 participants

設備のリノベーション

J-99-00188

- 1. 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.
- 2. 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 of 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.
- 3. QUALIFICATION OF APPLICANT** (1) more than five year's experience in plant/planning 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.
- 4. TRAINING INSTITUTIONS** (1) Kyushu International Centre (KIC), JICA (2) Kitakyushu International Techno-cooperative Association (KITA)
- 5. REMARKS** A compulsory 25-hour Japanese language course will be conducted prior to the technical training.

CERAMIC KILN AND FIRING TECHNOLOGY

Sep. 20, 1999 - Feb. 21, 2000, 8 participants

セラミック窯炉及び焼成技術

J-99-00505

- 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 (50 hours).