## MONITORING AND CONTROL TECHNOLOGY OF ACID DEPOSITION

Jan. 11, '99 - Mar. 19, '99, 8 participants

酸性雨のモニタリングと対策技術 J-98-03339

1. **PURPOSE** The purpose of the course is to provide the officials in administrative bodies which are engaged in environmental management such as monitoring of acid deposition and reducation of cause substance with the following; (1) Technical knowledge related to environmental management strategies which would give the participants opportunities to examine possible applicabilities of these strategies to acid deposition in their respective countries (2) An opportunity in which the participants can discuss with Japanese expert monitoring and measure techniques of acid deposition, and also exchange views and opinions.
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) Outline of Environmental Problem (2) Impacts of Acid Deposition (3) Generation mechanism of Acid Deposition (4) Monitoring of Acid Deposition (5) Measures of Acid Deposition (6) Quality Assurance/Quality Control
3. **QUALIFICATION OF APPLICANT** (1) Leading officers in administrative bodies engaged in the field of environmental management with an experience from more than 3 years to less than 10 years (2) University graduates and/or those who have equivalent practical experience (3) Those who have an elementary knowledge of data analysis by personal computer (4) Less than 35 years of age
4. **TRAINING INSTITUTIONS** (1) Hyogo International Centre (HIC), JICA (2) Environment Bureau, Kobe Prefecture
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for several days.

## ENVIRONMENT MANAGEMENT SEMINAR (ASIAN COUNTRIES)

Jun. 8, '98 - Jul. 19, '98, 8 participants

環境管理セミナー(アジア地域) J-98-03265

1. **PURPOSE** In developing countries, countermeasures to industrial pollution and urban-life pollution from the viewpoint of prevention of global worming are to be promoted. The introduction of appropriate technology for sustainable development is also required.
2. **MAIN FEATURES OF CURRICULUM** In this course, the following major subjects will be covered through lectures, discussions and observation trips: (1) countermeasure to environmental problem and its history (2) environmental law system in Japan (3) establishment of environmental standard and discharge standard (4) monitoring of generation course (5) establishment of environmental management plan and regional pollution prevention plan (6) environmental assessment (7) sustainable development (8) preservation of global environment
3. **QUALIFICATION OF APPLICANT** (1) middle-class officials in charge of planning project in the field of environment (2) have more than 10 years' experience (3) between 35 and 45 years of age (4) university graduates
4. **TRAINING INSTITUTIONS** (1) Osaka International Centre, JICA (2) Global Environment Centre Foundation (GEC) (3) Environment and Public health Bureau, Osaka City Government (4) Kwansei Gakuin University

## ENGINEERING FOR REGIONAL ENVIRONMENTAL PRESERVATION

Aug. 31, '98 - Nov. 18, '98, 5 participants

地域環境保全技術 J-98-03260

1. **PURPOSE** The purpose of this course is to provide technical officials and researchers with comprehensive knowledge and techniques of measuring and analyzing environmental aspects such as air and water quality which is indispensable to the understanding of basic environmental factors. Consequently, the participants are expected to study the method of region-wise environmental management and thereby to contribute to the formulation of various measures for environmental management and preservation.
2. **MAIN FEATURES OF CURRICULUM** This course mainly covers the following themes. (1) environmental legislation system (2) environmental impact assessment (3) pollution control plans, environmental management plans and other plans (4) regional activities that address global environmental problems (5) environmental measuring and analyzing pollution-related technology (6) environmental monitoring (7) measures to reduce the burdens of environmental pollution
3. **QUALIFICATION OF APPLICANT** (1) technical official and researcher engaged in the environmental administration of the national and local government or related public organization (2) university graduate in science and engineering or equivalent (3) have more than 5 years' experience in the field of environmental preservation (4) not more than 40 years of age
4. **TRAINING INSTITUTIONS** (1) Hokkaido International Centre, Sapporo (HICS), JICA (2) Hokkaido Environmental Science Research Center

## ENVIRONMENTAL RESOURCE MANAGEMENT POLICY FOR SUSTAINABLE DEVELOPMENT

Oct. 19, '98 - Dec. 20, '98, 12 participants

持続的開発と環境資源管理政策 J-98-03394

1. **PURPOSE** The concept, "Development and Environment" means a harmony of both of them, seeking sustainble development which is to satisfy the present needs without any risk to the future. The objective of this course is that the participants understand a relationship between environmental policy and development and master a planning ability of a sustainable development policy to promote the concept, "Development and Environment".
2. **MAIN FEATURES OF CURRICULUM** The following subjects are covered in this course through lectures, discussion and study tours; (1) Sustainable Resource and/or Environment Management (2) Project Evaluation and Environmental Impact Assess (3) Antipollution Measure (4) EOP (End of Pipe) Measure and CP (Cleaner Production) (5) Case Study (6) Presentation of Country Report (7) Preparation and Presentation of Study Report
3. **QUALIFICATION OF APPLICANT** (1) a technical officer, economist, researcher or NGO staff who is engaged in the planning or implementation of environmental policy with more than 8 years occupational experience (2) a university graduate or equivalent (3) over 30 and under 50 years of age
4. **TRAINING INSTITUTIONS** (1) Chugoku International Centre, JICA (CIC) (2) Graduate School for International Development and Cooperation, Hiroshima University
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks (25 hours)

## TECHNOLOGY FOR INDUSTRIAL EXHAUST GAS TREATMENT AND ENERGY SAVING

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

産業排ガス処理技術及び省エネルギー技術 J-98-03024

1. **PURPOSE** To provide with current theories, information and technology concerning industrial exhaust gas treatment and industrial energy utilization, which enhance ability to plan, execute and evaluate projects concerned. To provide methods for solving the problems of control and treatment of industrial exhaust gas, and opportunities to exchange information about how to deal with problems in this field.
2. **MAIN FEATURES OF CURRICULUM** Session I; History of industrial pollution in Yokkaichi City, Country Report presentation by the participants, Session II; System of environmental pollution control laws in Japan, Air pollution control law and environmental standard, Roles of central and local government in the environmental issues, Administrative guidelines to supplement laws and regulations, Introduction of Elemental dispersion model Session III; Energy saving law and related law on energy saving and recycling, Industrial energy use and energy conservation, Energy saving policies and activities in administration/industries, Resource recycling in industry, Energy saving activities in incinerating wastes, Energy saving technology for electric and energy use facilities, Session IV; Nitrogen oxides treatment technologies, Sulfur oxides treatment technologies, Experiment: Waste gas analysis, Dust collection technologies, Technology of Automobile exhaust gas treatment
3. **QUALIFICATION OF APPLICANT** (1) national and local governmental officials, business executives or technical engineers with more than five '5' years of practical experience in the field of industrial policy planning, business management or pollution control technology (2) university graduates or those who have equivalent knowledge and/or professional experience (3) under forth-five '45' years of age
4. **TRAINING INSTITUTIONS** (1) Nagoya International Training Centre (NITC), JICA (2) International Center for Environmental Technology Transfer (ICETT)

## MANAGEMENT OF INDUSTRIAL EFFLUENT AND WASTE

Jan. 19, '99 - Mar. 7, '99, 8 participants

産業排水・廃棄物の処理及びリサイクル技術 J-98-03361

1. **PURPOSE** To upgrade knowledge and techniques of the participants in the field of the management of industrial effluent and waste through lectures and observations, so as to enable them to contribute to the promotion of the most effective and appropriate measures for the environmental protection.
2. **MAIN FEATURES OF CURRICULUM** The objective of the technical sessions is to understand the balance between sustainable development and environmental conservation, and will consist of six sessions: (1) background and history of Japan's environmental policies and strategies (2) environmental conservation in lakes (3) industrial effluent management (4) waste disposal management (5) perspective strategies for environmental conservation, environmental monitoring system and impact assessment, and (6) review and discussion.
3. **QUALIFICATION OF APPLICANT** (1) University graduates or those who have equivalent knowledge and/or professional experience (2) academic staff, administrative officers, professional engineers with more than 5 years experience of practical experience in the following work: (a) environmental monitoring stations (b) water treatment industries (c) technical engineers of factories, especially water pollution management and/or waste disposal management (3) under 45 years of age.
4. **TRAINING INSTITUTIONS** (1) Nagoya International Training Centre (NITC), JICA (2) International Center for Environmental Technology Transfer (ICETT)

## INDUSTRIAL SOLID WASTE RECYCLING TECHNOLOGY

Jan. 19, '99 - Mar. 4, '99, 5 participants

産業廃棄物の再資源化 J-98-03121

1. **PURPOSE** (1) to provide the participants with an outline of recycling technologies for industrial solid waste (2) to enhance their ability to develop policies on industrial solid waste management and recycling (3)to enhance their ability to plan, execute and evaluate projects related to industrial solid waste recycling (4) identify and select options for solving the problems of industrial solid waste (5) to provide the participants with an opportunity to exchange information on ways they have found to deal with problems concerning industrial solid waste recycling
2. **MAIN FEATURES OF CURRICULUM** The following core subjects will be covered through the course, in principle: (1) History of industrial solid waste management and problems in the development of industrial activities (2) Administrative structures to promote industrial solid waste recycling (3) Current systems of industrial solid waste management and recycling (4) Legislation and policies in industrial solid waste management and recycling (5) Industrial solid waste management and recycling technologies (6) Case studies of recycling of industrial solid waste streams (7) Country Report (8) Study Visits to Facilities
3. **QUALIFICATION OF APPLICANT** (1) be technical university graduates or possess equivalent technical knowledge and/or professional experience (2) be technical officials in the central or local government with more than five (5) years in principle of practical experience in the field of industrial waste management (3) be thirty (30) to forty-five (45) years of age
4. **TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Clean Japan Center

## ENVIRONMENTAL AND SAFETY TECHNOLOGY IN PETROCHEMICAL INDUSTRIES

Jun. 15, '98 - Aug. 9, '98, 10 participants

石油化学工業における環境保安技術 J-98-03249

1. **PURPOSE** The course is implemented with emphasis on the technology and countermeasure of environmental conservation and safety in petrochemical industry to contribute to the improvement of environment in participating countries.
2. **MAIN FEATURES OF CURRICULUM** (1) Introduction: Environmental Conservation Measures in Japan, Petrochemical Industry in Japan and Yokkaichi City, Outline of the Basic Environment Law, Law and Regulations Related to Pollution Control, Presentation of Country Report by the Participants (2) Treatment Technology and Environmental Protection Measures and Safety Technologies; Oil Refining, Waste Water Treatment, Exhaust Gas Treatment, Other Environmental Protection Technology (Energy Saving, Recycling and Monitoring), Disaster Prevention and Countermeasures (High Pressure Gas, Dangerous Substance and Oil Spill), Fire Fighting System in Petrochemical Complex, Monitoring System (3) Applied Environmental Conservation Information; Primary Practice in Measuring Polluted Substances, Environmental Impact Assessment, Environmental Conservation and Economics, Environmental Information System
3. **QUALIFICATION OF APPLICANT** (1) presently holding senior positions with more than five '5' years practical experience in the field of environmental conservation in petrochemical industry (2) university graduates or those who have the equivalent academic background (3) under forty-five '45' years of age
4. **TRAINING INSTITUTIONS** (1) Nagoya International Training Centre (NITC), JICA (2) International Center for Environmental Technology Transfer (ICETT)
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for one week (25 hours)

## POLLUTION CONTROL OF COAL-FIRED THERMAL POWER PLANTS

Jun. 1, '98 - Jul. 27, '98, 5 participants

石炭火力発電公害防止 J-98-03271

1. **PURPOSE** To learn techniques for collection, measurement and analysis of exhaust gas emitted from a coal-fired thermal power plant and ambient air. To acquire the knowledge and technology required for air pollution control through Japanese experience and methods of the exhaust gas monitoring system and other pollution countermeasures.
2. **MAIN FEATURES OF CURRICULUM** This course is divided into four main themes. Theme I: Outline of Environmental Problems in Japan and Others (Environment Condition in Nagoya, Global Environmental Problems) Theme II: Administration on Environmental Conservation (Japanese Law System on Pollution Control) Theme III: Pollution Control at Coal-Fired Thermal Power Plant/Environmental Conservation Activities of Electric power company in Japan. (Desulfurization and Dust Collecting Technology, Combustion and Denitrification Technology, Effluent Treatment Technology) Theme IV: Practice on Pollutants Sampling and Analysis (Sampling and Analysis of coal, SOx, NOx, Dust, COD, and Others)
3. **QUALIFICATION OF APPLICANT** (1) university graduate or those who have equivalent professional experiences in this field (2) more than three '3' years of experience in pollution control of coal-fired thermal power generations (3) currently a governmental administrator in charge of pollution control on coal-fired thermal power plant or an engineer working in either public or private coal-fired thermal power plant (4) between twenty-five '25' and forty '40' years of age
4. **TRAINING INSTITUTIONS** (1) Nagoya International Training Centre (NITC), JICA (2) Environmental Affairs Bureau, City of Nagoya (3) Nagoya City Environmental Science Research Institute, the City of Nagoya (4) Chubu Electric Power Co., Inc. (CEPCO)
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for one week (25 hours).

## MONITORING FOR ENVIRONMENTAL CONTAMINANTS

Feb. 8, '99 - Sep. 9, '99, 8 participants

環境負荷物質分析技術 J-98-03387

1. **PURPOSE** The purpose of the course is to help inremediate level engineers to acquire in-depth knowledge of the technology for evaluatinf safety of environmental contaminants to human beings and environment through understandinf of princi;les and technology for technology for monitoring environmental contaminants,instrumental analysis, and practice of immuno-chemical measurement, thus contributing to the improvement of crop and environmental monitoring technology .
2. **MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on inrtoduction of compregensive knowledge on the followinf subjects through lecture, practice and field trip. (1) Safety of environmental contaminants to human beings and environment (2) Principles and technology for monitoring environmentalcontaminants (3) Analysis of residual agricultural chemicals in the crops (4) Analysis of residual agricultural chemicals in the imported crops (5) Technology for immuno-chemical measurement of environmental contaminants (6) Analysis of pollutants in environmental samples
3. **QUALIFICATION OF APPLICANT** (1) Intermediate level engineers in the fields of crop protection and environmental science (2) Experience in analysis and safety evaluation of agricultural chemicals and environmental pollutants required (3) University graduate or equivalent (4) 25 to 35 uears old
4. **TRAINING INSTITUTIONS** (1) Hyogo International Centre (HIC), JICA (2) Department of Plant Protection, faculty of Agriculture, Kobe University (3) Hyogo Prefectural Agricultural Institute (4) Kobe Quarantine Station
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical traning for two weeks (40 hours)

## HEAVY METAL POLLUTION CONTROL

May 11, '98 - Jul. 26, '98, 6 participants

有害金属汚染対策 J-98-03304

1. **PURPOSE** The purpose of this course is to make participants understand the importance of harmful metal pollution measures through examples of pollution caused by harmful metal (i.e., lead in exhaust gas from automobiles, Minamata disease, and Itai-itai disease). The participants will master techniques to control source of pollutant techniques through practice and the analysis method of harmful metal in source of pollutant, the air industrial wastewater, river water, soil, and plants, and thereby to contribute to establish pollution measures in respective countries.
2. **MAIN FEATURES OF CURRICULUM** The following major subjects will be covered in the course; (1) toxicity evaluation of toxic substance (2) case study on harmful metal pollution and its influence on plants and health (3) standard of harmful metal in the air, water, soil, and food and its restriction by laws (4) harmful metal analysis and analytic practice on the air, water, wastes, soil, and food etc. (5) influence on plants and health such as growth disorder caused by harmful metal (6) recovery strategy of polluted soil, etc., and (7) treatment technology of toxic substance
3. **QUALIFICATION OF APPLICANT** (1) middle-class technical officials or researchers in the field of environment (2) have more than 3 years' experience (3) between 30 and 40 years of age (4) university graduate and equivalent (5) have experience in environmental analysis
4. **TRAINING INSTITUTIONS** (1) Osaka International Centre (OSIC), JICA (2) Environment and Public Health Bureau (3) Osaka City Government

## DOMESTIC WASTE WATER MANAGEMENT USING SEWAGE SYSTEM AND SEPTIC TANK (JOKASO)

Aug. 24, '98 - Nov. 8, '98, 12 participants

下水道と浄化槽などによる生活排水処理対策(中米諸国) J-98-03347

1. **PURPOSE** The purpose of this course is to learn planning skill of domestic waste water management based on future population estimate according the scale of taget area, which contributes to the improvement of environmental conservation in a respective country.
2. **MAIN FEATURES OF CURRICULUM** It mainly covers: (1) the physical and chemical measurement of water quality (2) the history of Japanese domestic waste water treatment and outline of countermeasures taken by the central or local government (3) the theory and practical treatment method (4) zoning of a collective treatment and a house scale treatment.
3. **QUALIFICATION OF APPLICANT** (1) presently engaged in planning of domestic waste water treatment with more than three years occupational experience (2) university graduate or equivalent (3) not more than 40 years of age.
4. **TRAINING INSTITUTIONS** (1) Chugoku International Centre (CIC), JICA (2) Higashi Hiroshima City
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for one week (25 hours).

## ENVIRONMENTAL MANAGEMENT

Aug. 24, '98 - Dec. 11, '98, 8 participants

公害防止行政　　J-98-03358

1. **PURPOSE** In developing countries, an environmental legal framework is being consolidated these days. But the know-how of practical administrative methods such as monitoring, technical standard, inspection and guidance is insufficient due to lack of experience. The purpose of this course is to offer administrative knowledge which is necessary for technical staff methods as well as to master a practical capability through a case study.
2. **MAIN FEATURES OF CURRICULUM** (1) Environmental Administration and its History (2) Practical Application by Authority (3) Pollution Control Technique for Pollutants (4) Case Study
3. **QUALIFICATION OF APPLICANT** (1) senior technical staff presently directly engaged in the environmental administration in the national and local governmental or related public organizations (2) more than three years experience in the field of environmental protection (3) university graduate or equivalent (4) under 40 years of age
4. **TRAINING INSTITUTIONS** (1) Chugoku International Centre (CIC), JICA (2) Hiroshima Prefectural Health and Environment Center
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks (25 hours).

## SAVING AND RE-USING INDUSTRIAL WATER

not executed in FY 98

廃水の再生利用(1998年度休止)

1. **PURPOSE** Along with economic development, especially in the industrial sector, the emphasis should be placed upon saving water resources and prevention of water pollution. Thereby, the course aims at introducing the participants the effective countermeasures and new technology useful for the waste water management.
2. **MAIN FEATURES OF CURRICULUM** The course covers following subjects; (1) outline of Japan's waste water management (2) laws and regulations concerning environmental protection (3) technology on water treatment and re-use, desalination, purification, building drainage sewage treatment (4) visits to research laboratories related plants and facilities for water treatment
3. **QUALIFICATION OF APPLICANT** (1) university graduate majoring engineering, or equivalent (2) have more than five year practical experience in the waste water management (3) engaged in government office or public corporation (4) between 30 and 50 years of age
4. **TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Water Re-Use Promotion Center (3) Ministry of International Trade and Industry
5. **REMARKS** This course is offered alternately with the course "Industrial Solid Waste Recycling Technology". This year (in Japanese Fiscal Year 1998), this course will not be offered.

## SEMINAR ON INDUSTRIAL STATISTICS

Oct. 27, '98 - Nov. 20, '98, 10 participants

産業統計セミナー　　J-98-03341

1. **PURPOSE** The purpose of this course is to provide participants engaged in statistics with general knowledge of industrial statistics, and to contribute to further statistical development in each county. (Industrial statistics: Economic statistics implemented within industries such as the manufactures and commerce, to be more specific, including Census of Manufactures, Census of Commerce, Current Survey of Production, Indices of Industrial Production and Input-Output Tables, excluding the statistics of population, agriculture, construction, service and international trade in a broad sense.) *Commerce basically means domestic wholesale and retail trade
2. **OBJECTIVES** (1) to acquire knowledge and technique as to planning, data collection, sample design, and publication, etc., regarding industrial statistics, (2) to acquire how to analyze statistics utilizing industrial statistics and how to operate personal computers, (3) to recognize the importance of industrial statistics which is internationally comparable. (including to acquire knowledge of construction of statistical database comparable among countries.)
3. **MAIN FEATURES OF CURRICULUM** Mainly consist of lectures on the following items: (1) Outlines of industrial statistics. (2) Various sorts of census surveys (manufactures and commerce) (3) Various sorts of current survey (production and commerce) (4) Enterprise based surveys (5) Various sorts of secondary statistics (Indices of Industrial Production and Input-Output Table, etc.) (6) Methods of analysis utilizing industrial statistics (7) Various sorts of classification (industrial classification, commodity classification, etc.) (8) Construction of statistical database (9) The importance of internationally comparable statistics (10) On-site observation of statistical practice, etc. (11) Industrial statistics of participants' countries (Presentation by participants, etc.).
4. **QUALIFICATION OF APPLICANT** (1) be officers currently engaged in the field of industrial statistics, (2) have more than 5 years of occupational experience in this field, (3) over 25 years of age but under 40 years of age, (4) have a sufficient knowledge of basic mathematics
5. **TRAINING INSTITUTIONS** (1) Research and Statistics Department, Minister's Secretariat, Ministry of International Trade and Industry (2) International Trade and Industry Statistics Association (3) Tokyo International Centre (TIC), JICA
6. **No JAPANESE LANGUAGE CLASS**

## OPERATION AND MAINTENANCE OF URBAN WATER SUPPLY FACILITIES

May 18, '98 - Aug. 8, '98, 7 participants

都市上水道維持管理　　J-98-03217

1. **PURPOSE** This course is intended for experts and administrators who are expected to take responsible roles in the improvement of main waterworks in their respective countries where deterioration of water sources and the lack of water supply due to the increase of population in urban areas is a serious problem. The purpose of this course is to provide participants with broad knowledge such as the strategy for general maintenance and management of facilities, establishment of maintenance system, water purification technology, etc., while making effective use of existing facilities.
2. **MAIN FEATURES OF CURRICULUM** This course is conducted mainly by practice and discussion, and report making is requested at the end of each session. Main contents are: (1) introduction of waterworks (2) operation and maintenance of water supply facilities (3) water purification technology (4) planning of urban water supplying system
3. **QUALIFICATION OF APPLICANT** (1) inspectors, chiefs, or superintendents of urban water supply schemes/authorities using surface water resources (2) have experience of at least 3 years in the above mentioned field (3) between 28 and 40 years of age.
4. **TRAINING INSTITUTIONS** (1) Osaka International Centre (OSIC), JICA (2) Osaka Municipal Waterworks Bureau (3) Osaka International House Foundation.
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks.

## WATERWORKS ENGINEERING FOR COLD REGIONS

Oct. 5, '98 - Dec. 6, '98, 8 participants

寒冷地水道技術者養成 J-98-03252

1. **PURPOSE** Focused on the technical problems of waterworks caused by climatic characteristics in cold regions, this course is designed to train technicians by providing basic knowledge and comprehensive techniques of water-supply system, integrated planning and designing methods of waterworks, and techniques for operation/maintenance of waterworks facilities.
2. **MAIN FEATURES OF CURRICULUM** This course is emphasizes on technical exercise: (1) water leakage prevention (2) water quality control (3) water treatment facilities (4) water distribution planning and pipe network (5) design and construction management (6) water service instillations
3. **QUALIFICATION OF APPLICANT** (1) technical official in charge of waterworks in central or local government, or in public bodies with more than three years of practical experience (2) university graduate or equivalent (3) under 40 years of age
4. **TRAINING INSTITUTIONS** (1) Hokkaido International Centre, Sapporo (HICS), JICA (2) Sapporo Waterworks Bureau

## NON-REVENUE WATER MANAGEMENT (LEAKAGE CONTROL)

Oct. 22, '98 - Dec. 21, '98, 8 participants

上水道無収水量管理対策 J-98-03311

1. **PURPOSE** To provide with comprehensive knowledge of non-revenue water management, focusing on leakage control.
2. **MAIN FEATURES OF CURRICULUM** The emphasis is put on lectures, observations and practices. The practical training is to be conducted at Technical Training Center of Nagoya Waterworks Bureau. The main themes are: (1) open seminar (2) leakage detection and repair (3) leakage prevention measures (planning, design, construction, maintenance) (4) metering system (5) mapping management (6) water charges (7) countermeasures for natural disasters. Case study is included at the end of the training, where participants will make an applicable plan for leakage prevention.
3. **QUALIFICATION OF APPLICANT** (1) university graduate or equivalent (2) administrative officials who have engineering background (3) currently engaged in the field of waterworks for more than five years (4) between 27 and 40 years of age
4. **TRAINING INSTITUTIONS** (1) Nagoya International Training Centre (NITC), JICA (2) Waterworks Bureau, City of Nagoya (3) other public institutions and private enterprises
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for one week (25 hours).

## SEWERAGE TECHNOLOGY FOR STORMWATER DRAINAGE

Aug. 24, '98 - Nov. 28, '98, 6 participants

都市排水 J-98-03325

1. **PURPOSE** The purpose of this course is to offer technical administrative officers an opportunity to acquire knowledge and technological know-how on sewerage system improvement (basic planning, designing, construction, and maintenance), with emphasis on rainwater drainage works in urban areas, and hence contributing to the improvement of the expertise of the leading administrative officers in this field, and the effective execution of sewerage system improvements in participating countries.
2. **MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on laboratory experiments and introduction of Japanese experience. The main themes are: (1) introduction to sewerage system (2) urbanization and urban drainage (3) improvement of urban sewerage system and countermeasures against stormwater (4) designing and construction of urban drainage facilities (5) maintenance of urban drainage facilities (6) improvement of urban infrastructure
3. **QUALIFICATION OF APPLICANT** (1) university graduate or those with equivalent technical qualifications in this field, and have five or more years of practical experience (2) between 30 and 40 years of age (3) technical administrative officers in charge of sewage works in the government or government-affiliated organizations
4. **TRAINING INSTITUTIONS** (1) Osaka International Centre (OSIC), JICA (2) Osaka Sewerage Works Bureau, Osaka Municipal Government (3) Osaka City Sewarage Engineering Association
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks.

## URBAN SOLID WASTE MANAGEMENT

Aug. 3, '98 - Nov. 6, '98, 8 participants

都市廃棄物対策 J-98-03366

1. **PURPOSE** The purpose of the course is to contribute to the improvement of public health in participating countries by training personnel to take leadership and middle management roles in planning and implementing waste management programs in their own countries. This will be accomplished by having participants learn in detail about waste management in big Japanese cities. They will also learn about the special characteristics of urban waste management programs while acquiring comprehensive knowledge on waste management.
2. **MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on introduction of the Japanese experience. The main themes are: (1) outline of waste management (2) outline of regional administration (3) economics and measures to counteract pollution (4) domestic waste management (5) intermediate treat facilities (6) final disposal site (7) restrictions on industrial waste management
3. **QUALIFICATION OF APPLICANT** (1) Engineers or administrative officials with at least three years of waste management experience or an equivalent level of specialized knowledge. Applications should also be limited to those who will continue working in the field of waste management after the training course (2) University graduates having majored in analytical chemistry or microbiology, or those with equivalent technical knowledge (3) Under 40 years of age
4. **TRAINING INSTITUTIONS** (1) Osaka International Centre (OSIC), JICA (2) Global Environment Centre Foundation (GEC) (3) Osaka City Environmental Management Bureau
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for one week.

## TECHNOLOGY FOR INSPECTION OF WATER POLLUTION IN URBAN AREAS

May 18, '98 - Jul. 19, '98, 5 participants

都市型水質汚濁検査技術 J-98-03293

1. **PURPOSE** To help overcome water pollution problems in developing countries, this course is designed to contribute to the promotion of countermeasures against water pollution by comprehensively introducing water quality inspection technology and preventive measures against water pollution to engineers from these countries engaged in this field.
2. **MAIN FEATURES OF CURRICULUM** This course has the top priority on analysis exercises, and consists of lectures, exercises and observation studies. Main features are as follows; **(1)** lectures-urban water pollution and its control of water pollution in Sapporo City; **(2)** practices-river water analysis, drinking water analysis, water system bacillus analysis, toxic substance analysis, acid rain analysis; and **(3)** observation-water supply and sewerage facilities, waste management facilities, industrial waste water processing facilities, environmental monitoring center, environmental education facilities, commercial facilities to prevent environmental pollution.
3. **QUALIFICATION OF APPLICANT** **(1)** engineer of an environmental pollution analysis institution of a central or a local government or technical official of a department concerning environmental pollution administration **(2)** university graduate or equivalent with over 3 years of experience **(3)** between 25 and 40 years of age
4. **TRAINING INSTITUTIONS** **(1)** Hokkaido International Centre, Sapporo (HICS), JICA **(2)** Sapporo City Institute of Public Health

## COMPREHENSIVE WASTE MANAGEMENT TECHNIQUES

May 25, '98 - Aug. 7, '98, 8 participants

廃棄物処理総合対策技術 J-98-03308

1. **PURPOSE** The appropriate knowledge and technology for solid waste management are very important for taking countermeasures for pollution of wastes in developing countries. To meet the demand, training is carried out in Hiroshima Prefecture, thus to to contribute disseminating the knowledge and technology, and improving the solid waste management.
2. **MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on workshop practice, laboratory experiments, discussion, and final report presentation by participants, besides lectures and observation. It mainly covers: **(1)** basic knowledge and techniques for planning, collection, haulage and disposal of solid wastes **(2)** techniques for examing and analizing wastes **(3)** techniques for restricting waste discharge, recycling and re-use of wastes
3. **QUALIFICATION OF APPLICANT** **(1)** senior technical staff engaged in the solid waste management in the national/local government, or related public organizations **(2)** more than three years experience in the field of solid waste management **(3)** university graduate or equivalent **(4)** under 40 years of age
4. **TRAINING INSTITUTIONS** **(1)** Chugoku International Centre (CIC), JICA **(2)** Hiroshima International Centre **(3)** Hiroshima Prefectural Health and Environment Center
5. **REMARKS** A compulsory 25 hour-Japanese language course will be conducted prior to the technical training.

## PRACTICAL TRAINING FOR MOTOR VEHICLE INSPECTION

Nov. 9, '98 - Dec. 18, '98, 8 participants

自動車検査実習 J-98-03374

1. **PURPOSE** This course is designed to provide personnel in charge of motor vehicle administration with an opportunity to realize the importance in the area of motor vehicle administration of the establishment of systems for inspection and maintenance and repair through lectures and training concerning such systems, thereby contributing to the establishment of systems for inspection and maintenance and repair.
2. **MAIN FEATURES OF CURRICULUM** In addition to understanding the concepts of systems for inspection and maintenance and repair, to acquire the knowhow to establish such systems in their own countries; **(1)** Motor vehicle inspection system, etc. (lectures; about 2 days) **(2)** Work practice, etc; in motor vehicle inspection (lectures/training; about 4 weeks) **(a)** Training using inspection instruments **(b)** Training in motor vehicle maintenance and repair (at the level of third class maintenance and repair mechanic) **(3)** Visits to motor vehicle manufacturers, etc. (about 2 days) **(a)** Passenger cars, two-wheeled motor vehicles **(4)** Visits to motor vehicle inspection sites, maintenance and repair factories (about 2 days)
3. **QUALIFICATION OF APPLICANT** **(1)** technical officials engaged in motor vehicle administration, and has between 3 and 15 years of work experience in this field **(2)** between 20 and 40 years of age **(3)** senior high school graduate or equivalent
4. **TRAINING INSTITUTIONS** **(1)** Hachioji International Training Centre (HITC), JICA **(2)** Inspection Training Center, Ministry of Transport **(3)** Japan Automobile Standards Internationalization Center (JASIC)

## ROAD CONSTRUCTION ENGINEERING

Jul. 13, '98 - Sep. 10, '98, 5 participants

道路技術者養成 J-98-03294

1. **PURPOSE** This course is designed for middle level technical officials who are concerned with road administration and projects in the developing countries. The purpose of this course is to introduce road construction engineering technologies as an indispensable infrastructure for activation and development of land and industries, and thereby to contribute to promotion of national land development.
2. **MAIN FEATURES OF CURRICULUM** **(1)** design and construction of roads **(2)** design and construction of road structures and bridges **(3)** maintenance and management of roads.
3. **QUALIFICATION OF APPLICANT** **(1)** middle level technical official concerned with road administration or projects, having over 3 years but under 8 years of experience **(2)** between 25 and 35 years of age.
4. **TRAINING INSTITUTIONS** **(1)** Hokkaido International Centre, Sapporo (HICS), JICA **(2)** Construction Bureau, City of Sapporo

## COLLOQAIUM ON URBAN PUBLIC TRANSPORT

Oct. 13, '98 - Dec. 1, '98, 10 participants

都市公共交通コロキウム J-98-03392

1. **PURPOSE** Purpose of the course is; (1) to obtain the wide views of urban transportation problems and deepen understanding of the necessity of improvement of the urban environment, and (2) to acquire the expertise and views of public transportation such as railway systems and bus services.
2. **MAIN FEATURES OF CURRICULUM** Lecture: (1) Environmental problems including measures for the pollution produced by urban transportation. (2 days) (2) Urban public transportation planning process. (3) Future subjects and measures for implementation of the project (3 days) (4) Present conditions of project implementation process from planning to the completio (1 day) (5) Introduction and support of privatization (1 day) (6) Present Conditions of public transportation (1 day) Observation: (1) Conditions of maintenance of operation of public transportation including local cities. (1 day) (2) Present conditions of the regional public transportation and report making. Country Report: (1) Discussions based on the country report previously presented by the participants (1 day)
3. **QUALIFICATION OF APPLICANT** (1) Occupation:technical administrative officers, researcher, and officers in charge of urban public transportation (2) Career: more than 3 years (3) Age: more than 38 years old (4) Education: university graduates or the equivalent (5) Others: sufficient command of spoken and written English
4. **TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Transport Policy Bureau, Ministry of Transport

## ROLLING STOCK MAINTENANCE AND MANAGEMENT

Aug. 18, '98 - Oct. 28, '98, 8 participants

鉄道車両管理 J-98-03332

1. **PURPOSE** The purpose of the course is to contribute to the development of railway and modernization of rolling stocks management in the developing countries through providing a wide range of knowledge and techniques about maintenance, management and manufacturing of the rolling stock in Japan as well as introducing various kinds of Japanese railway traffic systems to the participants.
2. **MAIN FEATURES OF CURRICULUM** This course consists of lectures, observations and exercises under cooperation with JR Group and rolling stock industries: (1) Outline of railway in Japan (2) An introduction to rolling stocks (3) Rolling stock maintenance (4) Operation planning (5) Security system and accident prevention (6) Manufacturing of rolling stocks and related parts (7) Various type of railroad traffic systems
3. **QUALIFICATION OF APPLICANT** (1) having been engaged in rolling stock engineering for more than two years with more than seven years of practical experience in the field of railway engineering (preferably having experience in E.M.U. or E.L. rolling stock engineering) (2) under 40 years of age (3) university/college or equivalent technical school graduate
4. **TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Railway Bureau, Ministry of Transport (3) Japan Railway Group (JR) (4) Japan Overseas Rolling Stock Association (JORSA) (5) Japan Association of Rolling Stock Industries (JARI)
5. **REMARKS** This course is designed mainly for EL or EMU types of rolling stock.

## RAILWAY SIGNAL,TELECOMMUNICATION AND INFORMATION SYSTEM ENGINEERING

Jan. 7, '99 - Mar. 26, '99, 7 participants

鉄道情報システム J-98-03315

1. **PURPOSE** The purpose of the course is to provide the participants with the knowledge of how to plan the installation of railway signals and telecommunications equipment through lectures and observation, and to introduce them to the workshops with recent manufacturing techniques, thereby cultivating leading signal engineers who can contribute to safe train operations.
2. **MAIN FEATURES OF CURRICULUM** This course mainly consists of lectures by railway companies and signal manufactures, so as to provide information from both users' and manufacturers' sides. The main topics in the course are as follows. (1) management (a) signal engineering in general (b) railway telecommunications in general (c) planning & development (d) maintenance (2) basics of electrical signal (a) switch point (b) track circuit (c) blocking system (d) interlocking (3) safety system and others (a) Relay Interlocking and Electronic Interlocking (b) ATS (Automatic Train Stop) and ATC (Automatic Train Control) (c) CTC (Centralized Traffic Control) (d) electronic token block system (e) railway traffic control system (f) dispatcher information system (g) railway telecommunication
3. **QUALIFICATION OF APPLICANT** (1) railway signal engineering official with more than five years of practical experience (preferably in charge of electrical signal engineering) (2) presently engaged or expected to be engaged in the near future, in planning and administration work in the field of electrical signal engineering (3) university/college graduate or equivalent (4) not more than 40 years of age
4. **TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Railway Bureau, Ministry of Transport (3) Japan Railway Group (JR) (4) Japan Association of Signal Industries (5) Signal Manufactures

## TANKER SAFETY AND OPERATION

Jan. 25, '99 - Apr. 16, '99, 10 participants

タンカー安全実務 J-98-03373

1. **PURPOSE** The purpose of the course is to contribute to securing safety of transport by tankers and preserve the global environment through learning technology concerning management, handling loading and unloading of cargo oil unique to tankers as well as prevention of marine contamination and measures in case of emergency etc., thus contributing to the improvement of the level of seamen training in the countries concerned, to learn expertise concerning business unique to tankers (points to notice in living and working, danger and toxicity of cargo oil, measures for gas and static electricity while sailing) and understand its uniqueness, to learn safe handling of cargo oil through pracital training using simulators, and to learn proper measures at the outbreak of disasters.
2. **MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on introduction of comprehensive knowledge on the following subjects through lecture, practeice and field trip. (1) Theory of loading dangerous cargo, static electricity, theory of the use of special-purpose ship etc. (2) Handling of liquefied gas (3) Business related to oil terminals (4) Handling of crude oil (5) Emergency drill
3. **QUALIFICATION OF APPLICANT** (1) Intermediare instructors etc in the field of seamen training (2) Instructors or personnel in charge of guidance in tanker safety at seamen training institutes or shipping companies etc. (3) University or junior college graduate (4) Age: 25 to 40 years old
4. **TRAINING INSTITUTIONS** (1) Hyogo International Centre (HIC), JICA (2) Marine Technical College, Ministry of Transport (3) Maritime Disaster Prevention Center (4) Kobe University of Merchant Marine

## SEMINAR ON COASTAL SHIPPING

Oct. 20, '98 - Dec. 12, '98, 8 participants

内航海運 J-98-03372

1. **PURPOSE** Purpose of the course is to provide participants with; (1) basic knowledge for improvement and development of coastal shipping (passengers and freight) (2) general administration of coastal shipping in Japan (3) basic knowledge of security control and management system, and (4) knowledge on roles of organizations related to the coastal shipping.
2. **MAIN FEATURES OF CURRICULUM** The following subjects will be covered in this course; (1) Present situations of coastal shipping (passengers and freight) in Japan (2) Roles of coastal shipping in domestic transportation (3) Measures for security and administration system (4) Systems and activities of coastal shipping-related organization (5) Problems of coastal shipping (6) Present conditions of Modal Shift in Japan (7) Observation of institutions and organizations related to coastal shipping (8) presentation of country report .
3. **QUALIFICATION OF APPLICANT** Applicants should be; (1) presently engaged in administrative or managerial work related to coastal shipping with more than 3 years of experiences (2) university graduates or the equivalent, and (3) over 30 years of age
4. **TRAINING INSTITUTIONS** (1) Tokyo International Center, JICA (2) Maritime Transport Bureau, Ministry of Transport

## SEMINAR ON AIRPORT ENGINEERING

Aug. 25, '98 - Oct. 15, '98, 10 participants

空港工学セミナー J-98-03213

1. **PURPOSE** The seminar is designed to contribute to upgrading technical knowledge and skill on airport engineering for engineers who mainly work in the areas of airport planning, airport construction, and maintenance of airport facilities.
2. **MAIN FEATURES OF CURRICULUM** In this seminar, the emphasis is put on introduction of Japanese situation and systems and basic theories on airport planning and management. The major subjects are; (1) civil aviation in general (2) airports in general (3) airport planning (4) design and construction of airports (5) maintenance of airports
3. **QUALIFICATION OF APPLICANT** (1) university graduate specialized in civil engineering or architecture or equivalent (2) currently employed by their government or by public authorities for civil aviation as airport engineer or be newly-appointed personnel who will manage airport civil engineering matters (3) have more than five years of occupational experience in the fields of airport civil engineering such as in airport planning, airport construction, or maintenance (4) under 40 years of age
4. **TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Civil Aviation Bureau, Ministry of Transport

## SEMINAR ON FUTURE AIR NAVIGATION SYSTEMS (FANS) TECHNOLOGY

Feb. 11, '99 - Mar. 12, '99, 7 participants

将来航空航法システム(FANS)技術セミナー J-98-03337

1. **PURPOSE** Toward 2010, ICAO (International Civil Aviation Organization) is promoting worldwide construction of the new system (CNS Systems) based on the FANS (Future Air Navigation System) concept. The purpose of this course is to contribute to the aviation safety in Asian and Pacific countries with striving for promotion of the new CNS Systems by providing participants with fundamental knowledge on FANS concept, including global coordinated plan and air navigation plan in Asian and Pacific region.
2. **MAIN FEATURES OF CURRICULUM** Consist of lectures, discussions and observations. (1) Review of the problems in current system (2) FANS related activities in ICAO (3) Overview of the FANS (4) Guidelines for introduction of the new system (5) Examples of introduction of the new system (6) Observation of relevant facilities.
3. **QUALIFICATION OF APPLICANT** (1) have more than 5 years' occupational experience in the field of current air navigation and air traffic control system (2) experienced in designing the air navigation and air traffic control system (3) under 40 years of age
4. **TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Civil Aviation Bureau, Ministry of Transport (3) Japan Radio Air Navigation Systems Association
5. **REMARKS** This seminar is conducted alternately with "Seminar on Air Traffic Control" every other year. This year (Japanese fiscal year 1998), "Seminar on Future Air Navigation Systems (FANS) Technology" is conducted.

## GLOBAL SEISMOLOGICAL OBSERVATION

Oct. 27, '98 - Dec. 19, '98, 5 participants

グローバル地震観測 J-98-03276

1. **PURPOSE** This course is designed to introduce up-to-date technologies and knowledge in the field of global seismological observation to the participants who are expected to play important roles in a global monitoring network on nuclear tests.
2. **MAIN FEATURES OF CURRICULUM** This course consists of lectures, practices and field studies. Subjects are shown below; (1) introduction: seismology and nuclear politics (2) global seismic network (3) instrumentation and observation practice (4) hypocenter location (5) data processing (6) analyses of teleseismic record (7) source mechanism (8) world seismicity (9) practice of discrimination of nuclear explosion (10) study tour
3. **QUALIFICATION OF APPLICANT** (1) be university graduates or equivalent, with professional experience of more than three (3) years in the field of seismology (2) be well versed in basic mathematics such as differentiation and integration, and (3) be under thirty-five (35) years of age
4. **TRAINING INSTITUTIONS** (1) Tsukuba International Centre (TBIC), JICA (2) International Institute of Seismology and Earthquake Engineering (IISEE), Building Research Institute, Ministry of Construction
5. **REMARKS** A compulsory intensive Japanese language course is to be conducted prior to the technical training for one week (25 hours).

## SEMINAR ON PUBLIC WORKS ADMINISTRATION IN REGIONAL GOVERNMENT

Aug. 31, '98 - Oct. 30, '98, 5 participants

地域土木行政セミナー　　J-98-03290

1. **PURPOSE** In developing countries, "sustainable development" is called for public works projects. Spread of technologies and promotion of competent people for sustainable development is a pressing need. This course is designed for the middle level engineers in civil works in developing countries. The purpose of this course is to introduce legislative systems, budgeting, execution systems, construction flow, environmental concerns, construction technologies and other topics by lectures, seminars and on-the-spot observation studies, and thereby to contribute to development of national land in developing countries.
2. **MAIN FEATURES OF CURRICULUM** This course consists of lectures, seminars, and observations. (Lecture) legislative systems, budget systems, execution systems, role allotment of the national and local governments, planning and construction flow concerning public work, and harmonization of the public works and environmental protection. (Seminar) Opinion exchanges between the lecturers and the trainees. (Observation) Observation of different kinds of public works facilities and construction sites.
3. **QUALIFICATION OF APPLICANT** (1) middle level technical officials who are engaged in public works administration with more than five years of experience in this field (2) under 40 years of age (3) university graduate or equivalent.
4. **TRAINING INSTITUTIONS** (1) Hokkaido International Centre, Sapporo (HICS), JICA (2) Department of Public Works, Hokkaido Government

## URGENT DISASTER RESTORATION SYSTEM

Oct. 12, '98 - Dec. 23, '98, 8 participants

緊急災害復旧システム　　J-98-03301

1. **PURPOSE** The purpose of this course is to provide civil engineers who are engaged in infrastructure maintenance with comprehensive knowledge and techniques on the restoration system from disasters and reconstruction methods, and thereby to contribute to the establishment of the restoration system in developing countries
2. **MAIN FEATURES OF CURRICULUM** This course includes lectures and practices on (1) the outline of the great Hanshin earthquake (2) mechanism of earthquake disaster (3) aseismatic technology (4) predicting earthquakes (5) mechanisms of ordinary disasters in rivers and roads (6) disaster prevention plan (7) disaster-prevention-city plan (8) activities at the initial stage and rescue system (9) evacuation measures (10) protection of lifeline (11) communication at the time of disasters (12) disaster prevention (13) disaster rescue method and its application (14) administrative work of reconstruction for restoration, and (15) group research (disaster restoration plan)
3. **QUALIFICATION OF APPLICANT** (1) technical executive officials who are engaged in civil engineering (2) have more than 7 years' experience (3) between 30 and 39 years of age (4) university graduate and equivalent (5) civil engineer
4. **TRAINING INSTITUTIONS** (1) Osaka International Centre (OSIC), JICA (2) Japan Construction Training Center Foundation (JCTC)
5. **REMARKS** A compulsory intensive Japanese language course for one week will be conducted prior to the technical training.

## SOCIAL INFRASTRUCTURE DEVELOPMENT AND PLANNING

Aug. 10, '98 - Oct. 18, '98, 8 participants

社会資本整備計画　　J-98-03326

1. **PURPOSE** This course offers to those who belong to the government or government affiliated organizations of developing countries an opportunity to acquire the contemporary knowledge and techniques concerning the roles of infrastructure, methods and process of survey, analysis, and planning, through lectures, observations and group studies
2. **MAIN FEATURES OF CURRICULUM** This course consists of common subjects for all participants and group studies. It covers very broad technical fields; roads, railways, ports, water supply, sewage system, dams, and telecommunication in order for participants to obtain wide knowledge and technique to prepare comprehensive plants for the infrastructure. The main themes are: (1) introduction and social scheme of infrastructure development (a) development and economic effect of infrastructure in Japan, cultural climate and social infrastructure, Japanese overseas technical cooperation in infrastructure development (2) regional/urban planning (a) regional development, city planning, water supply system, sewage system, garbage management (3) highway, transport, telecommunication planning (a) road network, urban transport, railways (4) river/port planning (a) river improvement and management (water resources, flood control), port and harbour (5) case study (group discussion) on infrastructure development plants
3. **QUALIFICATION OF APPLICANT** (1) university graduates or those who have equivalent educational qualifications in the field of civil engineering, (2) civil engineers with at least five years' experience in planning infrastructure development (roads, railways, ports, water supply and sewage systems, dams, etc) (3) under 40 years of 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.

## URBAN GREENERY AND PARK ADMINISTRATION

Aug. 24, '98 - Nov. 13, '98, 6 participants

都市緑化行政　　J-98-03365

1. **PURPOSE** The course is intended for administrators in participating countries who are responsible for promoting projects to increase greenery and park constructions in the cities. It will include study of governmental policies and technical issues related to increasing urban greenery, preserving existing green spaces, city parks, natural parks and recreational facilities. Basic knowledge and experience necessary for the participants to respond in an informed manner to policy proposals and decisions will also be covered. The overall aim of the course is to upgrade the technical abilities of the leading governmental administrators and thus enabling them to contribute to the improvement of the living environment in developing countries.
2. **MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on introduction of Japanese experience and basic theories of greenery in city-planning and park administration. The main themes are: (1) creation of green space (a) policies of urban design with flowers and greenery, planning and design of planting, planning and policies of parks and green spaces (2) preservation and conservation of green spaces (a) national parks, Japanese gardens
3. **QUALIFICATION OF APPLICANT** (1) planning of supervisory administrators responsible for over-all urban greenery and park development with practical experience of at least seven years (2) under 40 years of age (3) university/college graduate or equivalent
4. **TRAINING INSTITUTIONS** (1) Osaka International Centre (OSIC), JICA (2) Osaka International House Foundation (3) Public Works Bureau, Osaka Municipal Government
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for one week.

## PLANNING FOR THE DEVELOPMENT OF URBAN FACILITIES (regional urban center)

Aug. 31, '98 - Nov. 4, '98, 8 participants

都市環境施設整備計画(地方中核都市) J-98-03362

1. **PURPOSE** The course is designed to train urban planning officers and engineers to be leaders in the field of urban facilities planning with the view of care for local residents and environmental consideration. This is accomplished through special training programs which teach techniques for the planning of roads, water works, public space, etc. in the medium sized City of Obihiro (i. e. population: 170,310, area: 618.94 $km^2$, population density: 275/$km^2$)
2. **MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on introduction of Japanese experience and basic theories of urban planning including planning presentation by participants. The main themes are: (1) road and traffic facilities (2) public space; parks, green area (3) service facilities and treatment plants; water work, electricity, gas services, sewage and filth treatment plant and waste disposal (4) waterway; rivers and dams (5) facilities for education and culture; schools
3. **QUALIFICATION OF APPLICANT** (1) engineer or administrative officer who is presently engaged in planning for urban facilities and has experience in this field more than five years (2) over 25 and under 45 years of age
4. **TRAINING INSTITUTIONS** (1) Hokkaido International Centre, Sapporo (HICS), JICA (2) Northern Regions Center (NRC)

## PRACTICAL LAND READJUSTMENT FOR URBAN DEVELOPMENT

Mar. 15, '99 - Jun. 10, '99, 10 participants

都市開発における土地区画整理事業実務 J-98-03385

1. **PURPOSE** To encourage urban development in developing countries with well trained persons having comprehensive and practical knowledge for implementation of land readjustment project.
2. **MAIN FEATURES OF CURRICULUM** The following major subject will be taught by lectures, experience etc. in the course. (1) city planning (city planning system, land use planning, city planning facilities, urban development projects) (2) land readjustment (land readjustment act, framework of land readjustment, procedures of project implementation, land readjustment project survey, land readjustment design, implementation plan, land evaluation, repotting, building removal, construction plan, construction management, financial plan)
3. **QUALIFICATION OF APPLICANT** (1) officials of national/ local government or authorities concerned who are presently engaged in urban development projects (2) university graduate or equivalents (3) between '25' and '45' years of age.
4. **TRAINING INSTITUTIONS** (1) Nagoya International Training Centre (NITC) (2) Nagoya Center for Urban Advancement
5. **REMARKS** Japanese language course available (50 hours)

## TECHNOLOGY FOR PREVENTION FROM PREMATURE DETERIORATION OF CONCRETE STRUCTURES

Jan. 11, '99 - Jul. 2, '99, 8 participants

コンクリート構造物耐久性向上技術 J-98-03270

1. **PURPOSE** The purpose of this course is to provide knowledge and information on prevention of premature deterioration of concrete structures in order to disseminate the technology in this field and to improve the durability of concrete structures in participating countries.
2. **MAIN FEATURES OF CURRICULUM** In this course, the following major subjects will be covered through lectures, discussions and observation trips: (1) method of corrosion investigation of existing ferroconcrete structures (2) basic engineering technique of concrete (material examination, mixing examination, etc.) (3) basic corrosion engineering technique (4) chemical analysis technology on quality of concrete (5) study on improvement of quality of concrete, material, and construction technique by using concrete material in respective countries (6) making a guideline about corrosion prevention of structures and improvement of durability
3. **QUALIFICATION OF APPLICANT** (1) technical officials in charge of construction of concrete structures or engineers who are engaged in research on concrete materials (2) have more than 5 years' experience (3) between 27 and 40 years of age (4) university graduates
4. **TRAINING INSTITUTIONS** (1) Osaka International Centre (OSIC), JICA (2) General Building Research Corporation
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks (25 hours).

## CONSTRUCTION SAFETY MANAGEMENT

Oct. 19, '98 - Dec. 6, '98, 10 participants

建設安全管理 J-98-03377

1. **PURPOSE** The course aims to opgrade participants' planning capacity in construction safety management throgh fundamental concepts, frameworks of relevant laws and regulations,and planning methods.
2. **MAIN FEATURES OF CURRICULUM** The following topics will be introduced through lectures, practices, observations and case studeies. (1) Outline of government policies on construction safety and health, and construction labour inspection system (2) Laws and relevant regulations regarding construction safety management (3) Analytical method to investigate causes of construction accidents (4) Plannning methods for national construction accident prevention policy (5) Concrete measures for construction accident prevention (6) Construction safety and health activities at construction firms and organizations
3. **QUALIFICATION OF APPLICANT** (1) Technical officer or researcher cutrently engaged in construction safety management in a governmental organization. (2) At least five years occupational experience (3) Technical college or university graduate with a major in engineering (4) Age between 30 and 50
4. **TRAINING INSTITUTIONS** (1) Tsukuba International Centre (TBIC), JICA (2) Japan Construction Safety and Health Association (JCSHA)
5. **REMARKS** An intensive Japanese language course will be conducted prior to the technical training for one week (25hours)

## GLOBAL MAPPING (ENVIRONMENT)

May 25, '98 - Aug. 9, '98, 5 participants

環境地図 J-98-03226

1. **PURPOSE** This course is designed to introduce the significance and technical background of global maps covering the whole world in the standardized method based on international cooperation, and to upgrade administrative skills of surveying and mapping. The course emphasizes the importance of preparing environmental maps of uniform standards that cover a broad area, and expects participants to acquire the knowledge and technology necessary for preparing such maps.
2. **MAIN FEATURES OF CURRICULUM** This course consists of lectures, practices and discussions and observation. Main subjects of the curriculum are as follows: **(1)** outline of global mapping **(2)** geographical information processing technology **(3)** application of geographical information system **(4)** digitalization of maps **(5)** remote sensing **(6)** survey law **(7)** digital elevation model.
3. **QUALIFICATION OF APPLICANT** **(1)** university graduate or equivalent **(2)** more than seven years of occupational experience in this field **(3)** a section head or an equivalent of a national institute related to surveying and mapping **(4)** under 40 years of age.
4. **TRAINING INSTITUTIONS** **(1)** Tsukuba International Centre (TBIC), JICA **(2)** Geographical Survey Institute (GSI), Ministry of Construction

## COASTAL OCEANOGRAPHY AND DATA PROCESSING

Nov. 10, '98 - Mar. 6, '99, 8 participants

沿岸海洋調査・データ処理 J-98-03393

1. **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.
2. **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
3. **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.
4. **TRAINING INSTITUTIONS** **(1)** Tokyo International Center (TIC), JICA **(2)** Hydrographic Department, Marine Safety agent
5. **REMARKS** This course is conducted alternately with "Nautical Charting" in every other year. This year (Japanese Fiscal Year 1998), this course will be conducted.

## RAPID MAIL SERVICE

Nov. 30, '98 - Dec. 20, '98, 7 participants

急送郵便業務 J-98-03395

1. **PURPOSE** The present course aims to effect the transfer of technology used in rapid mail service operations to overseas managers of such operations and thus improve the quality of mail service between Japan and these countries.
2. **MAIN FEATURES OF CURRICULUM** **(1)** Explanation of Japan's rapid mail service and related areas **(2)** Observation (Osaka international mail office, Osaka International Mail Center, Tokyo international mail office, other locations) **(3)** Discussion with personnel from the mail service field **(4)** Formulation of improvement plans for participant countries
3. **QUALIFICATION OF APPLICANT** Applicants should: **(1)** be managers in the rapid mail operations department of their country's mail service authority and have at least five years' experience **(2)** have a university degree or an equivalent level of specialist knowledge **(3)** be between 25 and 45 years of age
4. **TRAINING INSTITUTIONS** **(1)** JICA Osaka International Centre **(2)** International Postal Research Center
6. **OTHER** The present course is offered for the first time in fiscal year 1998 to replace the discontinued course in Postal Operation Management for Island Regions.

## DIGITAL RADIO COMMUNICATION ENGINEERING

May 11, '98 - Aug. 8, '98, 7 participants

ディジタル無線通信技術 J-98-03242

1. **PURPOSE** To introduce the basic and practical knowledge on digital radio communication engineering.
2. **MAIN FEATURES OF CURRICULUM** **(1)** Digital Radio Technology; Digital Radio, Satellite Communication, Rural Area Communications, Mobile Communication, Practical Exercise of 5G and 11G Microwave Method, Practical Exercise of Radio Network Design, Practical Exercise of Satellite Communication Technology **(2)** Digital Transmission Technology; Principle of Digital Transmission, Digital Multiplex Hierarchy, Analogue to Digital Conversion, Synchronized Multiplexing, Practical Exercise of Digital Transmission **(3)** ISDN Technology; Outline, User Network Interface, Using Method, Practical Exercise **(4)** Administration Techniques; Planning of Network Construction **(5)** Field Trip; NTT Show Room, Network Center, etc., Factories Relative Telecommunications **(6)** Observation Tour (KYOTO, HIROSHIMA) **(7)** New Technology; Multi-Media Service Technology, Wireless Local Loops, PHS **(8)** Others; Country Report Presentation
3. **QUALIFICATION OF APPLICANT** **(1)** university graduates specializing in telecommunications or electrical engineering, or those who have equivalent technical knowledge in this field **(2)** under 40 years of age **(3)** currently working for telecommunication administrations or common career organizations (except broadcasting stations), with at least three '3' years of practical experience on their own radio system
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 (55 hours).

## INTERNATIONAL OPTICAL FIBER SUBMARINE CABLE SYSTEM ENGINEERING

Jan. 12, '99 - Mar. 6, '99, 7 participants

国際光海底ケーブル通信技術 J-98-03243

1. **PURPOSE** The purpose of this course is to enable participants to acquire general knowledge of international optical fiber submarine cable system.
2. **MAIN FEATURES OF CURRICULUM** The course mainly consists of lectures, discussions and observations. The main items covered in this course are as follows: **(1)** optical fiber communication **(2)** international optical fiber submarine cable system **(3)** planning of international optical fiber submarine cable system **(4)** maintenance **(5)** associated subjects **(6)** observation
3. **QUALIFICATION OF APPLICANT** **(1)** university graduates in telecommunications and/or electrical/electronic engineering, or equivalent **(2)** persons with fundamental knowledge of optical fiber system and digital communications (such as digital transmission Principles of PCM, multiplexing, synchronization, etc.) **(3)** engaged in the field of international telecommunication services, and also currently engaged in or expected to be engaged in international optical fiber submarine cable system **(4)** under 40 years of age
4. **TRAINING INSTITUTIONS** **(1)** Tokyo International Centre (TIC), JICA **(2)** Kokusai Denshin Denwa Co., Ltd. (KDD) **(3)** KDD Engineering and Consulting, Inc. (KEC)

## TELECOMMUNICATION STANDARDIZATION

Jan. 25, '99 - Mar. 14, '99, 8 participants

電気通信標準化技術 J-98-03244

1. **PURPOSE** The purpose of this course is to introduce the participants to fundamental knowledge about the telecommunications standardization activities, by introducing Japanese experience and know-how such as the standardization structure, organization, up-to date international ISDN services and technology.
2. **MAIN FEATURES OF CURRICULUM** This course aims to present Japanese experience in telecommunications standardization, and covers; **(1)** administration **(2)** international standardization activities (especially in ITU) **(3)** standardization activities in Japan **(4)** previous trends of standardization activities **(5)** comprehensive study
3. **QUALIFICATION OF APPLICANT** **(1)** university graduate or equivalent (telecommunications technology) **(2)** official engaged in the field of telecommunications **(3)** under 45 years of age
4. **TRAINING INSTITUTIONS** **(1)** Hachioji International Training Centre **(2)** Ministry of Posts and Telecommunications

## INTERNATIONAL TELEPHONE COMMUNICATION (NETWORK MANAGEMENT AND OPERATION) ENGINEERING II

Jan. 12, '99 - Mar. 6, '99, 11 participants

国際電話通信技術 II J-98-03335

1. **PURPOSE** The purpose of the course is to contribute to the development of international telecommunications in developing countries through providing the participants who are engaged in designing and maintenance of the international telephone switching system with the knowledge and skills related to the international telephone communications such as telephone switching designing, maintenance, cable planning, network control and operation as well as introducing them to current technologies and services of the international telephone communication engineering.
2. **MAIN FEATURES OF CURRICULUM** The outlines of the course are: **(1)** network planning theory **(2)** telephone/ISDN services and network construction **(3)** digital switching techniques **(4)** introduction to the other related techniques and new services, and **(5)** observations and practices
3. **QUALIFICATION OF APPLICANT** **(1)** university graduate in telecommunications and/or electrical engineering or equivalent **(2)** have basic knowledge of computer and switching system technology, and currently engaged in or expected to be engaged in the field of establishment and maintenance of international telephone switching network **(3)** under 40 years of age
4. **TRAINING INSTITUTIONS** **(1)** Tokyo International Centre (TIC), JICA **(2)** Kokusai Denshin Denwa Co., Ltd. (KDD) **(3)** KDD Engineering and Consulting Inc. (KEC)

## TELECOMMUNICATION OUTSIDE PLANT MAINTENANCE TECHNIQUE

Jan. 18, '99 - Mar. 19, '99, 10 participants

通信線路保全技術 J-98-03391

1. **PURPOSE** Participants in this training course will learn maintenance technology and management systems for telecommunication outside plants through lecture and exercises based on NTT's know-how. Improving the participants' skills will contribute to more effective use of existing outside plants and will secure good quality services. **(1)** Participants will understand new telecommunication outside plant technologies and obtain skills in maintaining outside plants effectively in their own countries **(2)** Participants will develop their skills in analyzing problems which deteriorate outside plant **(3)** Participants will understand the systematic methods for maintaining outside plants to ensure the highest reliability.
2. **MAIN FEATURES OF CURRICULUM** **(1)** New technologies for telecommunications outside plants. (lecture 5 days) **(2)** Maintenance management for telecommunications outside plants. (lecture 4 days, practice 2 days) **(3)** Operation, monitoring and emergency measures for telecommunications. (lecture 5 days, practice 1 day) **(4)** Skills for maintaining plants and detecting and repairing faults **(5)** Actions to be taken to improve the service quality. (lecture 2 days, practice 2 days) **(6)** Observation of outside plants using the new technology. (2 days)
3. **QUALIFICATION OF APPLICANT** **(1)** Occupation: supervising engineer of telecommunications outside plant maintenance **(2)** Business career:having worked for 5 to 15 years **(3)** Age: 28 to 40 years old **(4)** Academic background: a bachelor degree or equivalent id desirable.
4. **TRAINING INSTITUTIONS** **(1)** Kyushu International Centre (KIC), JICA **(2)** Kitakyushu Branch, Nippon Telegraph and Telephone Corporation (NTT)

## OISCA FARMERS DEVELOPMENT

Jan. 19, '99 - Dec. 18, '99, 24 participants

オイスカ農業者育成　　J-98-03331

1. **PURPOSE** To provide with theoretical and practical knowledge and techniques in the fields of crop production and agricultural machinery mainly through practical studies so that they can serve as agricultural leaders in their countries.
2. **MAIN FEATURES OF CURRICULUM** The emphasis is put on lectures, practical training and field studies. The course is generally conducted in Japanese. The main themes are; (1) rice cultivation (2) vegetable cultivation (3) fruit cultivation (4) land improvement (5) land survey (6) investigations and trials (7) agricultural machinery (8) Japanese language
3. **QUALIFICATION OF APPLICANT** (1) agricultural staff or those who are engaged in agriculture as progressive farmers with occupational experience of more than two years in their specialities (2) between 20 and 30 years of age (3) graduate of GCE 'O' Level (10 years education) or equivalent
4. **TRAINING INSTITUTIONS** (1) Nagoya International Training Centre (NITC), JICA (2) OISCA Nishi-Nippon Training Centre (3) OISCA Chubu-Nippon Training Centre
5. **REMARKS** A compulsory intensive Japanese language course will be conducted in parallel with the technical training and lectures at OISCA Training Centers for three months (378 hours).

## FARMING TECHNOLOGY IN SLOPING AREAS FOR ENVIRONMENTAL CONSERVATION

Aug. 17, '98 - Oct. 10, '98, 5 participants

傾斜地域環境保全型農業　　J-98-03215

1. **PURPOSE** Due to the rapid population growth and high demand for food, poorer farmers with less capacity cultivate the marginal lands in hilly area. It causes serious soil erosion and other environmental problems. Hiroshima Prefecture has long accumulated the variable agricultural technologies in sloping areas. The purpose of this course is to provide the technical staffs with the appropriate agricultural technology in hilly regions, and thus to contribute to the promotion of agriculture and the environmental conservation in developing countries.
2. **MAIN FEATURES OF CURRICULUM** The course consists of lectuers, practices, and observation as well as discussion and report presentation. The course covers following issues: (1) understanding the characteristics of the natural conditions of agriculture in sloping areas (2) cultivation and management techniques suitable to sloped land (irrigation and drainage, fertilizer application, soil management and pest control for paddy rice, vegetable, flowers, and fruits) (3) observation of the actual conditions in Hiroshima Prefecture (rice terrace, cultivation of konjak and fruit trees)
3. **QUALIFICATION OF APPLICANT** (1) engaged in agricultural experiments, agricultural extension work, or agricultural administration in national/local governments, or relevant public organizations (2) occupational experience of more than three years in the field of agriculture (3) university graduate or equivalent (4) under 40 years of age
4. **TRAINING INSTITUTIONS** (1) Chugoku International Centre (CIC), JICA (2) Hiroshima International Centre (3) Hiroshima Prefectural Agriculture Research Center
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for one week (25 hours).

## HORTICULTURE IN PROTECTED ENVIRONMENT

Sep. 15, '98 - Dec. 13, '98, 5 participants

施設園芸技術　　J-98-03269

1. **PURPOSE** Provide knowledge and information on plant production in protected environments, such as computer controlled greenhouses, in order to increase the production of specific cash crops in participating countries. The course introduces simple facilities and proper techniques which now draw much attention.
2. **MAIN FEATURES OF CURRICULUM** In this course, the following major subjects will be covered through lectures, discussions and observation trips: (1) outline of horticulture institution (2) basics of cultivation technique (3) basics of computer technique (4) information on botanical organisms (5) economy and management of horticulture
3. **QUALIFICATION OF APPLICANT** (1) university graduates or the equivalent (2) technicians or educators involved in government-sponsored research or education in the field of agricultural engineering or horticulture in a protected environment (3) under 40 years of age (4) more than 3 years' experience
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 (50 hours).

## RICE CULTIVATION (MIDDLE EASTERN AND AFRICAN COUNTRIES)

Feb. 22, '99 - Oct. 23, '99, 9 participants

稲作(中近東・アフリカ諸国)　　J-98-03281

1. **PURPOSE** The purpose of the course is to introduce practical knowledge and techniques of rice production to the participants who are engaged in agricultural extension or training of farmers.
2. **MAIN FEATURES OF CURRICULUM** This course consists of lectures, practices, experiments and study tours. It mainly covers: (1) lecture (a) rice agronomy (b) rice physiology (c) plant protection (d) soil and fertilizer (e) rice breeding (f) agricultural extension (g) farm economy (h) farm machinery (i) land improvement (2) practice and experiment (a) field experiment on specific subjects (b) laboratory experiments (c) field practices (3) study tour (a) farm household survey (b) agricultural research stations (c) agricultural cooperatives (d) extension offices (e) industries related to agriculture
3. **QUALIFICATION OF APPLICANT** (1) technical official presently in charge of extension service of rice or training on rice (2) university graduate or equivalent (3) over 26 and under 35 years of age
4. **TRAINING INSTITUTIONS** Tsukuba International Centre (TBIC), JICA
5. **REMARKS** A compulsory intensive Japanese language course will be conducted along with the technical training for three weeks (25 hours).
6. **OTHER** Next focused area is MIDDLE and SOUTH AMERICAN COUNTIRES, and ASIAN COUNTRIES in 2000.

## INTEGRATED AGRICULTURE AND RURAL DEVELOPMENT THROUGH THE PARTICIPATION OF LOCAL FARMERS

Jun. 23, '98 - Aug. 2, '98, 10 participants

農民参加による農業農村開発 J-98-03287

1. **PURPOSE** Activation of rural areas is indispensable to achieve stabilization and improvement of agricultural production, thus to eliminate poverty in developing countries. This course is designed to train competent persons among those who will shoulder the development of rural areas aimed at improvement of rural communities, by incorporating methods for the advancement of communities and people, as well as knowledge and technologies related to general consolidation of rural areas, including improvement of circulation systems, reinforcement of farmers' organizations and utilization of the land and water resources.
2. **MAIN FEATURES OF CURRICULUM** This course consists of lectures, case studies on the concerned areas, on-the-spot training in rural districts, and observation studies at related facilities and general consolidated districts: (1) community development (introduction of cases for community development planning methods to establish organizations, promotion of participation of women in the development, agriculture and rural development projects with farmers' participation (2) Rural development (water management, distribution planning, community environment development plan, domiciliation environment etc.) (3) improvement of Agricultural Production (farm readjustment, land readjustment, agricultural management development plan, etc.) (4) maintenance and management methods (management of desolate lands and energy management for rural districts).
3. **QUALIFICATION OF APPLICANT** (1) an administrator of local government with more than ten years of practical experience who is presently concerned with agriculture and rural developments (2) university graduate or equivalent (3) under fifty years of age.
4. **TRAINING INSTITUTIONS** (1) Hokkaido International Centre, Sapporo (HICS), JICA (2) Japan Agricultural Land Development Agency

## AGRICULTURE-RELATED INFORMATION PROCESSING

Jan. 18, '99 - Apr. 15, '99, 8 participants

農業分野における情報処理技術 J-98-03300

1. **PURPOSE** The purpose of this course is to acquire computer operation skills of agriculture-related information network systems through experience of operating network systems, and thereby to apply them in the field of agriculture.
2. **MAIN FEATURES OF CURRICULUM** The following major subjects will be covered in the course; (1) theories on agricultural information (methods of information gathering, processing, and disposal) (2) introduction to computer networks (3) introduction to programming (spreadsheets, Visual Basic, etc.)
3. **QUALIFICATION OF APPLICANT** (1) engaged in agricultural administration in the government or other related institution, or engaged in agricultural improvement, and more than 3 years' experience (2) university graduate or equivalent, with an interest in computers (and with keyboard-operating experience, either with typewriters or with word processors), and (3) between 25 and 40 years of age.
4. **TRAINING INSTITUTIONS** (1) Hokkaido International Centre, Obihiro (HICO), JICA (2) Fujitsu Higashi-Hokkaido Systems Engineering, Ltd. (3) Northern Regions Center (NRC)

## SEED PRODUCTION OF UPLAND CROPS

Apr. 6, '98 - Jul. 20, '98, 7 participants

畑作物の種苗生産 J-98-03246

1. **PURPOSE** The purpose of this course is to provide technical officials and technicians with advanced and scientific knowledge and techniques required for sound seed production and applied cultivation method on upland crops such as potato, beans and maize through lectures, experiments and practices. It also aims to contribute to the improvement of demand and supply situation of foods and the diversification of dietary habits in participating countries.
2. **MAIN FEATURES OF CURRICULUM** This course mainly covers the following themes, and the emphasis is put on technical experience and practice. (1) apical meristem culture (2) fundamentals of breeding (3) plant propagation in net house (4) elimination of diseased plants (5) diagnosis of disease (6) production of serum for disease detection (7) crop cultivation (8) seed production (9) propagation and extension of disease-free seeds (10) storage and usage of genetic resources
3. **QUALIFICATION OF APPLICANT** (1) technical official and technician engaged in seed production and related works of upland crops with more than seven years experience (2) university graduate or equivalent (3) between 30 and 45 years of age
4. **TRAINING INSTITUTIONS** (1) Hokkaido International Centre, Obihiro (HICO), JICA (2) Tokachi Station, National Center for Seeds and Seedlings, Ministry of Agriculture, Forestry and Fisheries (3) Tokachi Agricultural Experiment Station, Hokkaido
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for seven days.

## UPLAND FARMING MANAGEMENT AND RESEARCH

Oct. 19, '98 - Dec. 18, '98, 10 participants

畑作管理研究 J-98-03349

1. **PURPOSE** To enhance participant knowledge of dry field farming production technologies and provide an opportunity for them to evaluate the usefulness of such systems. The training will begin with lectures on and observations of dry land farming techniques and progress with emphasis on acquiring the skills required to use these technologies.
2. **MAIN FEATURES OF CURRICULUM** (1) Theories on upland farming technology, agricultural cooperative unions, agricultural mutual aid associations, agricultural mechanization, land registration system, as well as joint enterprises (2) Observation of agricultural extension offices, cooperative unions, manufacturers of agri-machinery, agricultural welfare institutions, and individual farmers (3) Discussion: differences between agricultural development in Japan and other countries
3. **QUALIFICATION OF APPLICANT** The ideal applicant will: (1) work in dry field farming with a government agency or related institution, or be involved in a relevant agricultural field, with 3 to 10 years of experience (2) be a university graduate or the equivalent, and (3) be between 25 and 40 years of age
4. **TRAINING INSTITUTIONS** (1) Hokkaido International Centre, Obihiro (HICO), JICA (2) City of Obihiro

## CROPS CULTIVATION IN SUB-TROPICAL AREA (VEGETABLE)

Aug. 27, '98 - Jan .31, '99, 5 participants

亜熱帯地域作物栽培(野菜) J-98-03382

1. **PURPOSE** The purpose of this course is to introduce the participants to extensive knowledge and techniques necessary for improving the productivity of vegetable 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 participants is to take one of the following subjects for their individual work. **(1)** Vegetable Bleeding (Cucurbitaceous vegetable, leguminous vegetable etc.) **(2)** Vegetable Crops (lettuce spinach etc.) **(3)** Root and Tuber crops agronomy (Sweet potato,Turmeric etc.)
3. **QUALIFICATION OF APPLICANT** **(1)** presently engaged in researcher or extension service in the field of vegetable cultivation **(2)** university graduate or equivalent **(3)** under 35 years of age
4. **TRAINING INSTITUTIONS** **(1)** Okinawa International Centre (OIC) **(2)** Okinawa Prefectural Agricultural Experiment Station
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for four weeks

## AGRICULTURAL AND RURAL DEVELOPMENT (REVITALIZATION OF RURAL AREAS)

Jun. 8, '98 - Aug. 27, '98, 5 participants

農業農村整備(畑作地帯における農村地域の活性化) J-98-03216

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
4. **TRAINING INSTITUTIONS** **(1)** Hokkaido International Centre, Obihiro (HICO), JICA **(2)** Northern Regions Center, OBIHIRO International Center

## NGO-JICA PARTNERSHIP TRAINING COURSE FOR RURAL DEVELOPMENT

Nov. 2, '98 - Dec. 13, '98, 10 participants

NGO連携による村落開発 J-98-03386

1. **PURPOSE** By offering training in the fields of organization building, skill training and managerial knowhow to managerial staff of local non-governmental organizations involved in development projects (agricultural, forestry and fishery production, water supply systems, family workshops, healthcare, education, women's projects, etc.) in rural areas of developing countries, the course aims to contribute to the improvement of income and living standards in such areas. Discussion will be undertaken at the same time of effective methods of partnership between cooperation at central government level and non-governmental organization projects.
2. **MAIN FEATURES OF CURRICULUM** The course will consist of lectures, discussions, observation, and practicals. **(1)** Introduction of the projects in which course participants are involved, brief explanation of non-governmental organization activities in the country as a whole **(2)** Project management methods **(3)** Rural development methodology (need assessment methods, project evaluation methods, PCM methods). **(4)** Introduction of Japanese official development assistance schemes **(5)** Case studies of Japanese rural development **(6)** Public symposium
3. **QUALIFICATION OF APPLICANT** Applicants should: **(1)** occupy a managerial position in a non-governmental organization engaged in rural development projects (agricultural, forestry and fishery production, water supply systems, healthcare, education, rural industry, etc.) **(2)** fulfill one of the following conditions: **(a)** be recommended by a Japanese non-governmental organization which is a member of the Kansai Non-Governmental Organization Association **(b)** belong to an overseas non-governmental organization in receipt of JICA project-type technical cooperation for rural development **(c)** be recommended by their government. Officials of government organs engaged in rural development or planning of cooperation with overseas non-governmental organizations may also apply.
4. **TRAINING INSTITUTIONS** **(1)** JICA Osaka International Centre **(2)** Kansai Non-Governmental Organization Association
6. **OTHER** Course offered for the first time in fiscal year 1998.

## AUTOMATION OF AGRICULTURAL MACHINERY (AGRI-MATION)

Jun. 22, '98 - Oct. 5, '98, 7 participants

農業機械自動化技術 J-98-03261

1. **PURPOSE** The purpose of this course is to provide agricultural engineers with an understanding of the principles and mechanism of farm machinery, to be able to develop, improve and repair farm machinery in their respective countries. Moreover, participants will acquire knowledge of fundamental technology for the agri-mation of farm machinery, which will aid computer-assisted research and development of agricultural machinery.
2. **MAIN FEATURES OF CURRICULUM** This course mainly covers the following themes. **(1)** farm machinery theory and practice **(2)** training in agri-mation based on an understanding of the improvements necessary in farming **(3)** computer programming (C-language) **(4)** training in relay control; programmable control; microcomputer (Z80) use; sensor use; pneumatic control; etc.
3. **QUALIFICATION OF APPLICANT** **(1)** researcher, educational instructor and engineer engaged in improvement, development and research activities of farm machinery (excluding paddy farming) **(2)** have enough knowledge of operating computers **(3)** more than five years experience in the field of farm machinery (excluding paddy farming) **(4)** university graduate or equivalent **(5)** between 25 and 45 years of age
4. **TRAINING INSTITUTIONS** **(1)** Hokkaido International Centre, Obihiro (HICO), JICA **(2)** Northern Regions Center (NRC) **(3)** Obihiro City Industrial Technology Center

## FOOD PROCESSING AND PRESERVATION TECHNOLOGY

Jan. 4, '99 - Mar. 19, '99, 7 participants

食品加工・保全技術 J-98-03309

1. **PURPOSE** Appropriate processing and preservation technology is very useful to prevent the deterioration of agricultural raw products and processed foods. The course provides the participants with the basic knowledge and skills of food processing and preservation technology, in order to develop the food industry as well as to increase farmers' income by producing value-added agricultural products.
2. **MAIN FEATURES OF CURRICULUM** The course consists of lectures, laboratory practices and observation as well as discussion and report presentations. It covers the following issues: (1) food processing technology of agricultural raw foods (2) food preservation technology of agricultural raw products and processed foods (3) quality control including evaluation, analysis, and packaging of food stuff (4) technology for environmental conservation (5) field study at food processing factories.
3. **QUALIFICATION OF APPLICANT** (1) senior technical staff engaged in research and development of food processing and preservation, or quality control of processed foods in the national/local government, or related public organizations (2) more than 3 years experience in the field (3) university graduate or equivalent (4) under 45 years of age
4. **TRAINING INSTITUTIONS** (1) Chugoku International Centre (CIC), JICA (2) Hiroshima International Centre (3) Hiroshima Prefectural Food Technology Research Center
5. **REMARKS** The compulsory intensive Japanese language course will be conducted prior to the technical training for 25 hours (1 week). The course mainly deals with following food materials: rice, wheat, beans, orange, grape, cabbage, and chinesecleaf, etc.

## FORAGE PRODUCTION AND UTILIZATION TECHNOLOGY FOR RUMINANT ANIMALS

Mar. 22, '99 - Aug. 21, '99, 6 participants

飼料生産・利用技術 J-98-03247

1. **PURPOSE** The purpose of the course is to transfer advanced technology on forage production and utilization for cattle, through lectures and excursions. Participants will also acquire skills for improving forage situations while maintaining sustainability through practicals of various aspects of forage production and utilization including soil science, animal nutrition, etc.
2. **MAIN FEATURES OF CURRICULUM** The course covers various aspects of forage production and utilization technology. The major subjects are as follows; (1) soil science (2) soil analysis (3) pasture establishment and management (4) forage preservation (5) forage analysis (6) feed resources (7) seed production, cleaning and processing (8) breeding of pasture species (9) ruminants nutrition (10) biometrics (11) basic personal computer operation
3. **QUALIFICATION OF APPLICANT** (1) be nominated by their government (2) university graduate or equivalent academic background (3) currently engaged in the field of extension and/or research on forage production and utilization at government institutions with at least 5 years of experience in the job (4) over 26 years and under 40 years of age (5) proficient in spoken and written English (6) be in good health to undergo the training course. Pregrancy 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 three (4) weeks.

## DIAGNOSTIC TECHNOLOGY FOR DISEASE OF FOOD ANIMALS

Aug. 24, '98 - Mar. 4, '99, 6 participants

食用動物疾病の診断技術 J-98-03364

1. **PURPOSE** In the interest of food hygiene, hygienic management to ensure the safety of animals (livestock and poultry) as a food source has become an urgent priority worldwide. As a result, conventional systems for hygienic testing of livestock and poultry are being fundamentally revised and new technology developed. In the present course, Japan's latest hygienic management technology for food animals will be introduced to participants from developing countries with the aim of raising technical standards in these countries.
2. **MAIN FEATURES OF CURRICULUM** The course will focus on basic training and especially practical training. (1) Basic training: parasite testing technology, virus diagnostic technology, pathological testing technology, immunology, Serological testing technology, bacterial testing technology, theory and practice of clinical diagnostic technology (2) Applied training: field observation of livestock and poultry hygienic testing to gain an overall understanding; understanding of field conditions for basic operations (3) General training: (a) Lecture on hygiene management theory including HACCP (hazard analysis critical control points) (b) Observation of farms and food processing factories in the spirit of the latest theory that ensuring the safety of food animals is a continuous task which must be enforced from farmyard to dinner table (c) elaboration of a comprehensive hygiene management system.
3. **QUALIFICATION OF APPLICANT** Applicants should: (1) be technicians with at least 3 years' experience and currently active in research or routine operations in the field (2) be qualified as veterinary surgeons or livestock or poultry inspectors (3) be no more than 35 years old
4. **TRAINING INSTITUTIONS** (1) JICA Osaka International Centre (OSIC) (2) College of Agriculture, Osaka Prefecture University
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for one month.
6. **OTHER** The present course is offered for the first time in fiscal year 1998 on the basis of a revision of the content of the discontinued course in Laboratory Diagnosis of Poultry Diseases, which was conducted five times in total.

## ADVANCED STUDIES ON PROTOZOAN DISEASES

Oct. 12, '98 - Sep. 12, '99, 10 participants

上級原虫病研究 J-98-03248

1. **PURPOSE** The purpose of this course is to promote human resources in the research field of protozoan diseases in participating countries by improving the skills and the competence of participants who are primarily responsible to lay the foundation for the development of control measures against the diseases in their respective countries.
2. **MAIN FEATURES OF CURRICULUM** This course mainly covers the following themes. After lectures of common subjects, all participants are attached to one of the most fitted research laboratory such as the following fields in accordance with the purpose and speciality of each participant. (1) research field of Pathophysiology of Toxoplasma (2) research field of Hemoprotozoan and related infections (3) research field of African Trypanosomiasis (4) research field of Applied Immunogernetics (5) research field of applied molecular immunology and Embryology
3. **QUALIFICATION OF APPLICANT** (1) Bachelor of Science or Master of Science Degree in Biology, Zoology or of a related field, or a graduate of Veterinary Medicine or Medical Science (2) Currently employed as a permanent member of either a private or public (including teaching) institution, and/or research laboratory of an agency (3) More than three (3) years of working experience at the above institution (4) Be under forty-five (45) years of age
4. **TRAINING INSTITUTIONS** (1) Hokkaido International Centre, Obihiro (HICS), JICA (2) Research Center for Protozoan Molecular Immunology, Obihiro University of Agriculture and Veterinary Medicine
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for four weeks.

## DIAGNOSES AND CONTROL OF RABIES AND OTHER VIRAL ZOONOSES

Jan. 11, '99 - Mar. 21, '99, 6 participants

狂犬病などのウィルス性人畜共通伝染病の診断法と予防法　J-98-03288

1. **PURPOSE** This course is designed for veterinarians in Asian and African regions that are stricken by urban-rabies characteristically stricken. The purpose of this course is to introduce technologies concerning diagnosis and control of rabies and other viral zoonoses to the regions and to improve and promote the measures to counter such problems in the regions.
2. **MAIN FEATURES OF CURRICULUM** This course consists of lectures, practices, and observations of related institutions, aiming at an effective technical guidance from both the theoretical and practicable viewpoints (1) lectures (a) general introduction to viral zoonoses (b) details of viral zoonoses and international epidemiology (c) clinical, epidemiological diagnosis, laboratory diagnosis, vaccination, immunological technique and quarantine; and (2) practice (a) animal inoculation of rabies virus, tissue culture and virological diagnosis.
3. **QUALIFICATION OF APPLICANT** (1) technical officer or research worker with more than three years' experience, who is presently concerned with research or any other activities in this field (2) qualified as a veterinarian, (3) under 35 years of age.
4. **TRAINING INSTITUTIONS** (1) Hokkaido International Centre, Sapporo (HICS), JICA (2) Graduate School of Veterinary Medicine, Hokkaido University

## CLINICAL TECHNOLOGY FOR VETERINARY DIAGNOSIS

Aug. 10, '98 - Nov. 15, '98, 6 participants

獣医技術　J-98-03291

1. **PURPOSE** This course is designed for veterinarians from developing countries. The purpose of this course is to provide them with veterinary knowledge with emphasis on preventive sanitation for animal health care, and techniques of the diagnosis and treatment of illnesses, (i.e., guidance in food sanitation for maintaining the safety of foodstuffs from livestock, measures for the prevention of rabies and other virulent infections diseases) and thereby to improve standards in the field of veterinary science in respective country.
2. **MAIN FEATURES OF CURRICULUM** This course consists of lectures, practices and observations. (1) livestock feeding management (2) internal medicine for animals (3) animal surgery (4) animal reproductive organs (5) prevention and extermination of mastitis in cattle (6) clinical pathology (7) food and environmental sanitation (8) animal protection and management, and prevention of rabies.
3. **QUALIFICATION OF APPLICANT** (1) clinical veterinarians or veterinarians who work for central or local government (2) have more than five years' experience in this field (3) university graduate with a degree of veterinary medicine or equivalent (4) under 35 years of age
4. **TRAINING INSTITUTIONS** (1) Hokkaido International Centre, Sapporo (HICS), JICA (2) Hokkaido Veterinary Medical Association

## PRESERVATION TECHNIQUES OF MEAT AND MEAT PRODUCTS

Jan. 11, '99 - Jul. 4, '99, 5 participants

食肉及び食肉加工品の保蔵技術　J-98-03298

1. **PURPOSE** The purpose of this course is to provide lectures and practices (i.e., scientific overview and hygienic handling, techniques of meat processing and preservation), and thereby to contribute to improvement of meat products in quality.
2. **MAIN FEATURES OF CURRICULUM** The following major subjects will be covered in the course; (1) methods of livestock slaughtering and carcass grading, biochemistry of post-mortem changes in flesh (2) acquire knowledge of levels of hygiene and types of additives in the stage of processing (3) acquire processing and preservation techniques; and (4) have become knowledgeable of packaging materials used for meat products, and the special characteristics of those materials.
3. **QUALIFICATION OF APPLICANT** (1) technologist of the food processing factory or scientist of the food institution who is presently involved in the planning of food processing (2) university graduates or the equivalent (3) between 25 and 40 years of age.
4. **TRAINING INSTITUTIONS** (1) Hokkaido International Centre, Obihiro (HICS), JICA (2) Northern Regions Center (NRC)
5. **REMARKS** A compulsory intensive Japanese course will be conducted prior to the technical training for four weeks (100 hours).

## DEVASTATED FOREST RESTORATION TECHNIQUE

not executed in FY 98

荒廃林地復旧技術

1. **PURPOSE** The Knowledge and know-how of afforestation, tree planting, soil conservation, erosion and flood control, landslide prevention and hill side revegetation are necessary for the recovery and remedy of devastated forest areas, particularly deforestation and collapse of mountains. Training will be carried out at the fields in Hiroshima Prefecture to help the participants acquire the technology for the formation of sound forests and the conservation of local environments and to contribute to the creation and conservation of a comfortable earth environment.
2. **MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on lectures and practices which introduce forests and forestry in Japan,forestry and afforestation in Hiroshima Prefecture, as well as observation tours. It mainly covers: (1) planning mountainside foundation works (2) afforestation survey methods (3) Planning stream works
3. **QUALIFICATION OF APPLICANT** (1) more than three years of occupational and research experience in devastated forest restoration (2) university graduate or equivalent (3) under 35 years of age
4. **TRAINING INSTITUTIONS** (1) Chugoku International Centre (CIC), JICA (2) Forestry Department, Hiroshima Prefectural Goverment (3) Forestry Training Institute (FTI), Forestry Agency
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for 2 weeks (50hours)

## REFORESTATION PROMOTION LEADER

Sep. 1, '98 - Nov. 20, '98, 10 participants

森林造成指導者 J-98-03245

1. **PURPOSE** The purpose of this course is to upgrade the planning ability of participants who are responsible for the promotion of reforestation in degraded forest land in each country, by introducing policies, techniques and countermeasures in Japan as well as discussing the problems which participating countries confront.
2. **MAIN FEATURES OF CURRICULUM** The following major subjects will be covered in the course; **(1)** outline of forestry and wood industry in Japan **(2)** forestry and forest products administration, systems and organizations in Japan **(3)** forestry techniques in Japan **(4)** forestry techniques development and extension in Japan **(5)** observation tours in several forestry regions **(6)** presentation and discussion on forestry in participating countries
3. **QUALIFICATION OF APPLICANT** **(1)** be personnel in positions responsible for planning work in the central and local governmental forestry organizations (not be researcher of public organizations or instructor or professor of colleges/universities) **(2)** not more than 45 years of age **(3)** forestry universities/ colleges graduates or equivalent with occupational experience of more than eight years in the field of forestry administration
4. **TRAINING INSTITUTIONS** **(1)** Tokyo International Centre (TIC), JICA **(2)** Japan Overseas Forestry Consultants Association (JOFCA) **(3)** Forestry Agency

## NATURAL FOREST MANAGEMENT AND REGIONAL FORESTRY BY COMMUNITY PARTICIPATION

Aug. 17, '98 - Oct. 27, '98, 7 participants

天然林経営と住民参加による地域林業 J-98-03296

1. **PURPOSE** The purpose of this course is to introduce systems and technologies of natural forest conservation, and thus contribute to the preservation of forest resources in developing countries. In addition, through the introduction of examples of methods of citizen-led forest creation and forest administration, the course will assist in the formulation of citizen-participatory regional forestry policies appropriate to the conductions of each country.
2. **MAIN FEATURES OF CURRICULUM** The following major subjects will be covered in the course; **(1)** forest administration **(2)** natural forest conservation technology and construction of forest roads for the promotion of natural forest conservation **(3)** the role of forest owners' cooperatives **(4)** forestry education **(5)** forest creation activities by citizen participation.
3. **QUALIFICATION OF APPLICANT** **(1)** presently engaged in governmental or institutional forest administration, and at least five years' experience **(2)** university graduate in forestry, or equivalent **(3)** under forty years of age.
4. **TRAINING INSTITUTIONS** **(1)** Hokkaido International Centre, Obihiro (HICO), JICA **(2)** Hokkaido Forestry Bureau **(3)** Obihiro Regional Forest Office, Forestry Agency **(4)** Hokkaido Government **(5)** City of Obihiro
5. **REMARKS** A compulsory intensive Japanese course will be conducted prior to the technical training for two weeks (28 hours).

## SUSTAINABLE MANAGEMENT OF MANGROVE ECOSYSTEMS

Aug. 27, '98 - Nov. 8, '98, 5 participants

持続可能なマングローブ生態系管理技術 J-98-03262

1. **PURPOSE** The purpose of this course is for participants to acquire managerial technique for sustainable utilization of mangrove ecosystem by studying the characteristics of the ecosystem and by designing proper management plans. In this way, this course aims to contribute to the environmental conservation of the world.
2. **MAIN FEATURES OF CURRICULUM** **(1)** understanding of mangrove ecosystems **(2)** effective utilization of mangrove ecosystems in the respect of resource production **(3)** survey of mangrove forest **(4)** re-production technology of mangrove ecosystems **(5)** extension method of techniques and making a technical report
3. **QUALIFICATION OF APPLICANT** **(1)** be university graduate or equivalent, and be working presently in forest or mangrove field more than three years **(2)** be involved with mangrove management as a leader or a potential leader **(3)** not be more than 41 years old
4. **TRAINING INSTITUTIONS** **(1)** Okinawa International Centre (OIC), JICA **(2)** International Society for Mangrove Ecosystems (ISME)

## APPLICATION OF SYMBIOTIC MICROORGANISMS IN TROPICAL AGRICULTURE AND FORESTRY

Aug. 31, '98 - Dec. 9, '98, 5 participants

熱帯農林業における共生微生物の利用技術 J-98-03267

1. **PURPOSE** The purpose of this course is to provide practical knowledge on identification, manipulation and inoculation techniques of microorganisms (especially of symbiotic), whose effective use can increase agricultural and/or forestry production in the tropics. The course also focuses on how laboratory instruments are used in this field, in order to contribute to sustainable development in the tropics through sound utilization of natural products.
2. **MAIN FEATURES OF CURRICULUM** In this course, the following major subjects will be covered through lectures, practices and observation trips: **(1)** function of symbiotic microorganisms in natural ecosystem **(2)** identification of symbiotic microorganisms **(3)** microorganism culture method **(4)** microorganism Immobilizing technique **(5)** microorganism inoculation technique **(6)** carbonization technique and charcoal utilization
3. **QUALIFICATION OF APPLICANT** **(1)** university graduates (preferably in agriculture, forestry or biology) or equivalent on higher qualification, and have been engaged in agricultural, forestry on microbiological research on education for over three years **(2)** under 40 years of age **(3)** university graduates
4. **TRAINING INSTITUTIONS** **(1)** Osaka International Centre (OSIC), JICA **(2)** Biological Environment Institute, Kansai Environmental Engineering Center Co., Ltd.
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks (45 hours).

## FISHERY SCIENCE AND TECHNOLOGY

Mar. 29, '99 - Jun. 25, '99, 5 participants

海洋漁業生産管理技術 J-98-03205

1. **PURPOSE** The course aims to enhance the ability of those who are expected to contribute to sustainable development of coastal and offshore fisheries in participating countries by providing knowledge and skills of fishery production and management as well as marine resource survey and research techniques.
2. **MAIN FEATURES OF CURRICULUM** The training programme consists of lecturers, practical field work, discussions and study visits. The following subjects are covered in the course: (1) Japanese technology of fishery production and management (a) theory of fishery (b) fishery management (2) fishing gear and fishing methods applicable in participating countries (3) hydrography necessary for proper management of fishery grounds (a) marine ecology (b) resource analysis (4) fishing mechanics (a) measurement of located fish (b) development of resource quantity research methods (5) navigation (6) fishing boat management
3. **QUALIFICATION OF APPLICANT** (1) be engaged in the planning or management of fishery production and marine research (2) have five years' occupational experience (3) be between 25 and 40 years of age (4) be university graduates or the equivalent.
4. **TRAINING INSTITUTIONS** (1) Kyushu International Centre (KIC), JICA (2) National Fisheries University, Ministry of Agriculture, Forestry and Fisheries
5. **REMARKS** A compulsory 75-hour Japanese language course will be conducted prior to the technical training.

## SEMINAR ON FISHERY RESOURCE MANAGEMENT

Feb. 9, '99 - Mar. 28, '99, 5 participants

水産資源管理セミナー J-98-03272

1. **PURPOSE** The purpose of this seminar is to introduce various fishery resource management schemes, both traditional and modern, as well as knowledge on environmental protection and coastal community development. The seminar is designed for persons currently involved in fishery resource management.
2. **MAIN FEATURES OF CURRICULUM** This seminar is comprised of a series of lectures and discussions. The lectures will cover introduction of fisheries resource management schemes and their evaluation from economic, biological, mathematical, political, sociological and anthropological viewpoints. In the discussions, participants will present their experiences in fishery resource management and discuss effective fishery resource management schemes based on knowledge gained during the seminar. The main lecture subjects are: (1) basic theory of resource management and examples of their application (2) stock assessment (3) modern fishery resource management schemes (4) traditional resource management scheme operating in local communities (5) stock enhancement (6) Fishery Law and regulations
3. **QUALIFICATION OF APPLICANT** (1) government official who is presently in charge of formulation or implementation of fishery resource management scheme with more than three years' occupational experience (2) an university graduate or equivalent (3) between 30 and 45 years of age
4. **TRAINING INSTITUTIONS** Kanagawa International Fisheries Training Centre (KIFTC), JICA

## SEMINAR ON PLANNING AND MANAGEMENT OF FISHING PORT FACILITIES AND MARKETING SYSTEM

Jun. 23, '98 - Aug. 9, '98, 5 participants

漁港及び流通施設計画管理セミナー J-98-03273

1. **PURPOSE** The purpose of this seminar is to provide comprehensive knowledge on the establishment of fish collection, distribution and marketing system laying emphasis on planning and maintenance of fishing port and other facilities as the core of the system.
2. **MAIN FEATURES OF CURRICULUM** In this seminar, emphasis will be placed on introducing Japanese fish collection, distribution and marketing systems and the functions of the fishing port and other facilities in these systems. A detailed knowledge of civil engineering associated with fishing port design and construction is not required. The main subjects are: (1) formulation of fishing port construction project (2) planning, management and administration of the fishing port (3) planning, management and administration of fish market and related facilities (4) fish marketing system (5) fishermen's organization (6) fishery statistics.
3. **QUALIFICATION OF APPLICANT** (1) university graduate or equivalent (2) government official engaged in planning and management of fishing port facilities and fish distribution system with more than three years' occupational experience (3) between 30 and 45 years of age
4. **TRAINING INSTITUTIONS** Kanagawa International Fisheries Training Centre (KIFTC), JICA

## TECHNOLOGY FOR SUSTAINABLE USE OF MARINE MICROBES AND MARINE NATURAL CHEMICALS

Oct. 5, '98 - Jul. 23, '99, 5 participants

海洋微生物・海洋天然化学物質利用技術 J-98-03343

1. **PURPOSE** The purpose of this course is to contribute to upgrading knowledge and techniques of researchers in the field of sustainable utilization of marine microorganisms and natural substances existing in Oceania and Southeast Asia.
2. **MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on lectures and laboratory work concerning marine biotechnology. The curriculum consists of the following subject: (1) Isolation and cultivation of marine microorganisms (2) Natural products chemistry of marine organisms and microorganisms (3) Biofouling and marine biotechnology (4) Biochemistry and biotechnology on proteinacious adhesion substances.
3. **QUALIFICATION OF APPLICANT** (1) University graduates in the field of organic chemistry, micro biology, biological chemistry, or molecular biology. Master's or doctoral degree is preferable (2) Researchers, technical administrators belonging to national research institute or universities (3) under 40 years of age
4. **TRAINING INSTITUTIONS** (1) Tohoku Branch, JICA (2) Marine Biotechnology Institute Co., Ltd.

## APPLICATION METHODS OF STANDARDIZATION AND QUALITY SYSTEM

Feb. 15, '99 - Mar. 19, '99, 6 participants

標準化・品質システム活用　　J-98-03220

1. **PURPOSE** This course is designed to upgrade the skills of participants from ASEAN countries who are expected to transfer such methods as quality system based on ISO (International Organization for Standardization) 9000 Series, and TQM (Total Quality Management) which encourages quality improvement activities in their respective countries. Through such methods, the course aims to activate market economics as well as to promote international trade.
2. **MAIN FEATURES OF CURRICULUM** In this course, the emphasis is mainly to put on introduction of Japanese experience through practical lectures including case studies, various discussions, and factory visits. The main themes are: (1) philosophy of TQM (2) motivation (3) TQM methodology-adoption of SQC (Statistical Quality Control), QC (Quality Control) story, etc. (4) evaluation of TQM implementation (5) model course programing.
3. **QUALIFICATION OF APPLICANT** (1) having occupational experience of at least 3 years in this field, and be engaged in the job of the same subject presently (2) between the age of 30 and 45 (3) university graduates
4. **TRAINING INSTITUTIONS** (1) Osaka International Centre (OSIC), JICA (2) Japanese Standards Association.

## ENTERPRISE NETWORKING FOR REGIONAL DEVELOPMENT

Oct. 5, '98 - Nov. 22, '98, 10 participants

企業ネットワークによる地域開発　　J-98-03233

1. **PURPOSE** The training will help the participants formulate the strateges to organize enterprise networking systems in local communities of developing countries. The participants will be introduced to: (1) the significance of local industries in national economic development in Japan (2) the methods of promoting local industries as a core of regional development and (3) the applicability of the concept of enterprise networking in participating countries.
2. **MAIN FEATURES OF CURRICULUM** The following major subjects will be covered in the course: (1) concept of local industries (2) development of local industries in Japan (3) various methods of creating enterprise networking (4) role of local government in promoting enterprise networking (5) role of private sector initiatives in maintaining and developing enterprise networking and (6) training materials which will emphasize field trips by which the participants will have ample opportunity to observe existing enterprise networking in metal processing and textile industries in Niigata Prefecture, Japan
3. **QUALIFICATION OF APPLICANT** (1) currently working on the planning or implementation of local or regional industrial development projects and policy or those who are actively engaged in management of economic organization of public character, and preferably under 40 years of age (2) university graduate or equivalent
4. **TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) International University of Japan (IUJ), International Association of Niigata Prefecture.

## RESEARCH ON MEASUREMENT TECHNOLOGY AND STANDARD

Oct. 5, '98 - Aug. 1, '99, 5 participants

計測技術研究　　J-98-03313

1. **PURPOSE** This course is aimed at upgrading the measuring techniques of researchers and technicians of metrological laboratory in developing countries through intensive lectures, laboratory work, and study trips so as to contribute to the establishment of measurement standard in those countries.
2. **MAIN FEATURES OF CURRICULUM** Participants are expected to gain fundamental knowledge of measurement as well as broad knowledge of the legal metrology system. Furthermore, the following will also be gained depending on the theme participants select: (1) "measurement techniques": ability to accomplish research (2) "measurement standard": ability to accomplish calibration of measurement standard. The course is comprised of a common programme for all participants and individual research training. (1) common programme: (a) lectures (4 weeks; outline of National Research Laboratory of Metrology, legal metrology system, fundamentals of metrology, measurement control, etc.) (b) study trips (two 1 week trips, total of 2 weeks) (2) individual training: (8.3 months; participants are to choose one theme out of six themes offered.)
3. **QUALIFICATION OF APPLICANT** (1) Researcher presently engaged in technical research work at governmental or semi-governmental organization with 3 years or more of experience (2) university graduates or equivalent (3) over 25 and under 40 years of age.
4. **TRAINING INSTITUTIONS** (1) Tsukuba International Centre (TBIC), JICA (2) National Research Laboratory of Metrology (NRLM), Agency of Industrial Science and Technology, Ministry of Trade and Industry
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks (50 hours).

## INDUSTRIAL PROPERTY FOR APEC ECONOMIES

Sep. 23, '98 - Nov. 19, '98, 20 participants

APEC工業所有権　　J-98-03344

1. **PURPOSE** Since countries in APEC region have been getting advanced in development of Industrial Property System comparing to other developing countries in these years, demands for higher level technical supports for policy or legislation reform planning and reinforcement of examination system on Industrial Property have also been increased. Taking these circumstances into account, this course is designed to provide the participants who are engaged in policy planning in this field in APEC region countries with knowledge and skills for harmonious establishment and effective operation of Industrial Property.
2. **MAIN FEATURES OF CURRICULUM** The following themes will be covered in the course; (1) comparative theory of Industrial Property System (2) international protection and present status of Industrial Property (3) well-known trade marks and correspondence to the illegal commodities (4) roles of patent information and its application (5) exercise of privilege (6) economic value of Industrial Property (7) infringement cases of Industrial Property.
3. **QUALIFICATION OF APPLICANT** (1) engaged in policy planning in the field of Industrial Property with more than 5 years experience (2) university graduates or equivalent (3) over 30 but under 55 years of age
4. **TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) General Administration Department, Patent Agency (3) Japanese Institute of Invention and Innovation (JIII)
5. **REMARKS** This course is organized for APEC Economies.

## INORGANIC MATERIALS AND TECHNOLOGY FOR ELECTRONICS INDUSTRY

Aug. 31, '98 - Dec. 6, '98, 5 participants

エレクトロニクス工業のための無機材料工学 J-98-03268

1. **PURPOSE** The purpose of this course is to provide knowledge and information on inorganic materials and technology, which is the basis of electronic manufacturing industries.
2. **MAIN FEATURES OF CURRICULUM** In this course, the following major subjects will be covered through lectures, discussions and observation trips: (1) outline of inorganic materials and technology (2) inorganic materials process (3) materials analysis and characterization (4) evaluation of materials (5) date processing experiments (6) specialized training
3. **QUALIFICATION OF APPLICANT** (1) technical officers or researchers in the field of inorganic materials (2) have more than 3 years' experience (3) between 25 and 35 years of age (4) have a master's degree or the equivalent
4. **TRAINING INSTITUTIONS** (1) Osaka International Centre (OSIC), JICA (2) Osaka Municipal Technical Research Institute
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks (45 hours).

## MECHANICAL SPARE PARTS FOR PLANT MAINTENANCE (DESIGNING, MANUFACTURING, TESTING AND MANAGEMENT)

May 25, '98 - Oct. 24, '98, 7 participants

プラント用機械保全部品 J-98-03277

1. **PURPOSE** This training course is set up for plant maintenance managers or engineers in charge of spare parts control, procurement or manufacture of the parts. The purpose of the course is to enable participants to: (1) make out the plannings, designs or documents necessary to order spare parts for the domestic manufacturer (2) develop their ability to instruct and control the quality, cost or delivery for the domestic parts manufacturer (3) develop their ability to improve parts for prolonging useful life or reclaim broken or damaged parts
2. **MAIN FEATURES OF CURRICULUM** Participants will acquire the knowledge and techniques required for the domestic production or reclamation of spare parts. The main themes are: (1) basic subjects on machine parts and unit design techniques (2) systematizing inventory control of spare parts for repairs (3) analyzing the causes of machine parts breakdown (4) choosing proper materials as well as improving the materials by heat treatment or surface processing (5) improving parts design for longer life (6) preparation of technical specification for ordering spare parts and/or basic knowledge required for instructing parts manufacturers (7) techniques on reclaiming broken or damaged spare parts (8) applying computer to design and control of spare parts
3. **QUALIFICATION OF APPLICANT** (1) have 5 to 15 years' occupational experience in the field of maintenance engineering (2) in charge of spare parts making, purchasing and controling of spare parts (3) university graduate or the equivalent in mechanical engineering (4) between 27 and 40 years of age
4. **TRAINING INSTITUTIONS** (1) Kyushu International Centre (KIC), JICA (2) Kitakyushu International Techno-cooperative Association (3) Fukuoka Industrial Technology Center
5. **REMARKS** A compulsory 25-hour Japanese language course will be conducted prior to the technical training.

## ENERGY CONSERVATION AND RECYCLING TECHNOLOGY IN STEELMAKING (ARC FURNACE AND CONTINUOUS CASTING CONTROL)

Oct. 26, '98 - Feb. 22, '99, 8 participants

製鋼における省エネルギーとリサイクル技術 J-98-03312

1. **PURPOSE** To provide with comprehensive knowledge of controlling arc furnace and continuous casting operations, with consideration of energy conservation and recycling.
2. **MAIN FEATURES OF CURRICULUM** The emphasis is put on lectures and observations. The main themes are: (1) steel material (2) electric arc furnace equipment and control units (3) electrical steel making and its control (4) continuous casting operation and computerized control (5) secondary refining technology (6) quality control (7) use of scrap materials (8) energy conservation (9) recycling technology
3. **QUALIFICATION OF APPLICANT** (1) university graduate in metallurgical or mechanical engineering or equivalent (2) currently engaged in the field of electrical steel making for more than three '3' years; preferably at steel making plants and not be academic researchers or technicians (3) under '35' years of age.
4. **TRAINING INSTITUTIONS** (1) Nagoya International Training Centre (NITC), JICA (2) Aichi Steel Works, Ltd. (3) Chubu Steel Works, Ltd. (4) Daido Steel Co., Ltd. (5) Topy Industries Ltd. (6) other public institutions and private enterprises
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for three weeks (80 hours).

## NON-DESTRUCTIVE INSPECTION TECHNIQUE

Feb. 22, '99 - Jun. 27, '99, 8 participants

非破壊検査技術 J-98-03357

1. **PURPOSE** The purpose of the course is to provide the indispensable principle and techniques of non destructive inspection method for quality assurance of industrial products, e.g. non destructive testing of castings, forgings, rolled steel products or weldments, so as to develop their own industry.
2. **MAIN FEATURES OF CURRICULUM** In this course, theory of non destructive inspection techniques, the selection of proper inspection method according to the proposed use as well as the knowledge and skills of evaluating inspection results will be studied through lectures, practice and field trips. It mainly covers: (1) radiographic examination (2) ultrasonic test (3) magnetic particle examination (4) penetration test (5) eddy current examination
3. **QUALIFICATION OF APPLICANT** (1) university graduate in engineering (2) engineer of governmental inspecting organization or related organization (3) experience of welding structures and castings, or will be engaged in inspection work including non-destructive inspection (4) between 25 years and 40 years old of age
4. **TRAINING INSTITUTIONS** (1) Kyushu International Centre (KIC), JICA (2) Kitakyushu International Techno-cooperative Association (3) Kyushu Institute of Technology (4) Fukuoka Industrial Technology Center
5. **REMARKS** (1) A compulsory 25-hour Japanese language course will be conducted prior to the technical training.

## WELDING TECHNOLOGY II

Apr. 6, '98 - Oct. 2, '98, 8 participants

溶接技術 II　　J-98-03212

1. **PURPOSE** In order to bring up well-qualified engineers who are able to manage the welding construction and maintenance, the course provides theoretical and practical knowledge of welding technology.
2. **MAIN FEATURES OF CURRICULUM** Lecture, practical exercises and factory observations. The main themes are: **(1)** Welding processes and equipment; Physics of welding arc, gas-shielded metal arc welding, tungsten-inert gas welding, submerged arc welding, resistance welding, electron beam and laser beam welding, gas welding and other welding processes, surfacing, thermal cutting **(2)** Materials and their behavior during welding; alloys and phase diagrams, structure of the welded joint, cracking phenomena, cast irons, copper, titanium and aluminum **(3)** Construction and design; strength of materials, design principles of welded structure and behavior **(4)** Fabrication, applications engineering; quality assurance, welding stresses and distortion, plant facilities, health and safety **(5)** Fundamental practical operations **(6)** Observation and practice in industries, research institutes and educational facilities
3. **QUALIFICATION OF APPLICANT** **(1)** presently in charge of welding engineering, with three '3' years or more of experience in this field **(2)** university graduates or the equivalent **(3)** over twenty-six '26' and under thirty-five '35' years of age
4. **TRAINING INSTITUTIONS** **(1)** Nagoya International Training Centre (NITC), JICA **(2)** Japan Welding Engineering Society
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for three weeks (70 hours).

## PLANT MAINTENANCE ENGINEERING (ASIA)

May 6, '98 - Sep. 30, '98, 7 participants

プラントメンテナンス技術(アジア)　　J-98-03235

1. **PURPOSE** The purpose of this course is to enhance the capability of maintenance managers or engineers of continuous process plants who intend to introduce a preventive maintenance system in a plant, or have already introduced the system but have problems in carrying out the system smoothly.
2. **MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on the introduction of basic subjects of computerized maintenance management and techniques, as well as practical maintenance technology and effective maintenance management on the factory floor through plant visits. The course covers: **(1)** computers and their applications **(2)** maintenance of automatic control systems **(3)** metal fatigue and fractography **(4)** equipment inspection techniques **(5)** non-destructive testing **(6)** tribology and abrasion resistance **(7)** lubrication techniques **(8)** heat treatment and hard facing
3. **QUALIFICATION OF APPLICANT** **(1)** engineer or manager with more than three years' occupational experience in the field of plant maintenance work **(2)** presently in charge of maintenance work in continuous process plants, such as iron and steel, oil refinery or chemical, cement plant, automotive plant, etc. **(3)** university graduate or equivalent **(4)** 45 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 **(4)** Nippon Steel Corporation
5. **REMARKS** A compulsory 25-hour Japanese language course will be conducted prior to the technical training.

## TECHNIQUE D'ENTRETIEN: AUTOBUS ET CAMION

Jan. 5, '99 - Mar. 19, '99, 9 participants

バス・トラック整備技術(仏語)　　J-98-03279

1. **BUT** Ce cours est destin* aux mécaniciens travailliant * l'entretien des autobus et des camions poids-lourd. Il vise * leur fournir les connaissances fondamentales sur le mécanisme et le fonctionnement des véhicules diesel par le cours théorique et les travaux pratiques, ainsi que les tedchniques de réparation et d'entretien.
2. **CARACTERISTIQUES DU COURS** Le présent cours se caractèrise par l'acquisition des techniques d'entretien efficaces * travers les cours théoriques et les travaux pratiques pour chaque matière. A la fin de ce stge, les participants auront acquis les connaissances fondamentales sur les théories, les techniques de réparation et d'entretien ci-dessous concernant les autobus et les camions: moteur diesel et equipement périphériques, boite des vitesses pompe d'injection distributrice, freinage essieux avant et arrière et différential, equipement électrique
3. **CAPACITES DES CANDIDATS** **(1)** an possession de plus de trois and d'expérience dans le domaine de l'entretien et la réparation dews véhicules diesel **(2)** âgés de plus de 25 and et de 35 ans **(3)** dotés d'une connaissance suffisante de la langue française
4. **INSTITUTION DU STAGE** **(1)** Hachioji International Training Centre (HITC), JICA **(2)** La Société de Fabrication Automobile de Hino (Hino Motors Limited)
5. **REMARQUES** Le cours s'effectuera en français ou par traduction du japonais en français.

## D'ENTRETIEN ET DE REPARATION DE L'EQUIPEMENT DE CONSTRUCTION

Sep. 15, '98 - Dec. 13, '98, 8 participants

建設機械整備(仏語)　　J-98-03280

1. **BUT** Le cours est destin* au personnel technique ayant les services d'entretien et de gestion des machines de construction dans les pays participants et vise * leur fournir les informations récentes de notre pays sur la spécialit* concernée pour contribuer, finalement au développement technique des pays respectifs par lÂEsimilation technique.
2. **CARACTERISTIQUES DU COURS** Le présent cours se caractèrise par le déroulement de stage * quelques constructeurs d'équipements de construction. Cela facilitera l'acquisition de connaissances sur l'entretien et la réparation des équipements de construction ainsi que la gestion de l'atelier de l'entretien. Théorique gestion de l'equipement de construction, heure-homme standard de réparation, coût de possession de l'equipment de construction, gestion de l'atelier, carburant et lubrifiant, inspection des pièces, soudure. Pratique moteur, système d'embrayage, convertisseur de couple, boite des vitesses, bulldozer, chargeur, excavateur hydraulique, compacteur
3. **CAPACITES DES CANDIDATS** **(1)** * présent engagés plus en possession de plus de trois ans d'expérience dans le domaine de l'entretien d'équipement de construction **(2)** âgés de plus de 25 ans et de moins de 35 ans **(3)** dotés d'une connaissance suffisante de la langue française
4. **INSTITUTION DU STAGE** **(1)** Hachioji International Training Centre (HITC), JICA ou Centre de Formation Internationale de Hachioji **(2)** Division de l'Equipement de Construction, Ministère de la Construction **(3)** Japan Construction Mechanization Association (JCMA) ou Association Japonaise de Mecanisation de Construction
5. **REMARQUES** Le cours s'effectuera en français ou par traduction du japonais en français.

## RESEARCH AND APPLICATION OF USEFUL MICROORGANISM

May 18, '98 - Apr. 2, '99, 5 participants

有用微生物の研究と応用 J-98-03338

1. **PURPOSE** The purpose of this course is to instruct a researcher the basic knowledge and techniques of biotechnology on themes relating to useful microorganisms. Each participant will be expected to learn research methods through laboratory work and contribute to microorganism-related industries.
2. **MAIN FEATURES OF CURRICULUM** The participants will select one subject among seven subjects prepared for individual research training and engage in laboratory work under a instructor. Observation tours to relating research institutes and fermented companies will be conducted occasionally.
3. **QUALIFICATION OF APPLICANT** (1) presently engaged in research work in the field of biotechnology with more than three years occupational experience (2) Be a researcher with Master's degree (3) not more than 35 years of age.
4. **TRAINING INSTITUTIONS** (1) Chugoku International Centre (CIC), JICA (2) The National Research Institute of Brewing
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks (25 hours).

## CERAMICS DEVELOPMENT TECHNOLOGY II

Apr. 13, '98 - Oct. 19, '98, 5 participants

陶磁器開発・活用技術 II J-98-03211

1. **PURPOSE** To provide with scientific knowledge and techniques in the field of conventional ceramics, ranging from the study of raw materials to future application technology, in order to develop ceramic manufacturing technology in participating countries.
2. **MAIN FEATURES OF CURRICULUM** The emphasis is put on practical training, related lectures, and observation to small ceramics industries near Nagoya. The main themes are: (1) raw materials (2) preparation of bodies (3) preparation of glaze (4) screen printing (using computer) (5) firing techniques (Type of kiln, kiln structure, kiln materials, kiln furniture) (6) quality control (QC seven tools, process control, practice to prevent defects). During field trips, the participants will also have the chance to observe some of the famous areas for ceramic industries.
3. **QUALIFICATION OF APPLICANT** (1) university graduates or the equivalent, and with more than three '3' year practical experience in the field of ceramics (2) currently working at a ceramic manufacturing plant as an engineer or at an institution of ceramic R & D as a researcher, and not be craftsmen (3) between twenty-five '25' and forty '40' years of age
4. **TRAINING INSTITUTIONS** (1) Nagoya International Training Centre (NITC), JICA (2) National Industrial Research Institute of Nagoya (NIRIN) (3) Tajimi City Pottery Design and Technical Center (4) Institute for Comparative Pottery, Chukyo Junior College (5) other public institutions and private companies
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for four weeks (100 hours).

## TECHNOLOGY FOR G. H. G. S. EMISSION MITIGATION

Jan. 13 , '99 - Mar. 1, '99, 10 participants

地球温暖化防止技術 J-98-03376

1. **PURPOSE** As Japan is a partly to the United Nations Framework Convention on Climate Change, the purpose of the course is to prepare a manual on the discharge and absorption of greenhouse-effect gases; provide the scientific and technological information required to formulate and execute a national action plan to counter global warming; and provide training in technologies for controlling global warming.
2. **MAIN FEATURES OF CURRICULUM** (1) Japan's global restoration plan and its comprehensive policies to promote measures related to energy and the environment (Lecture, 1 day) (2) Energy-saving technologies and other environmentally sound technologies (Lecture, 2 days) (3) Industrial and consumer applications of energy-saving technologies (Field work, 3 days) (4) Research on carbon dioxide treatment technologies; new energy and power generation; and energy-saving technologies for high-energy-consuming industries (Lecture, 1 day; Field work, 4 days) (5) Development of innovative environmental technologies (Lecture, 4 days; Field work, 6 days) Improving photosynthesis efficiency with carbon dioxide fixation technology; technologies for manufacturing useful substances through chemical reactions, such as methanol from carbon dioxide; efficient hydrogen manufacturing technology using photosynthetic bacteria and other microbes; reduction of carbon dioxide by optical catalyst (artificial photosynthesis); carbon dioxide fixation through catalytic hydrogenation and its effective application, etc.
3. **QUALIFICATION OF APPLICANT** (1) governmental engineer in charge of energy conservation and other environmental issues for more than ten '10' years (2) university graduate or possess equivalent professional experiences in this field (3) less than forty-five '45' years of age
4. **TRAINING INSTITUTIONS** (1) Nagoya International Training Centre (NITC), JICA (2) International Center for Environmental Technology Transfer

## ELECTRIC POWER SYSTEM MANAGEMENT

Sep. 8, '98 - Oct. 22, '98, 6 participants

電力系統技術 J-98-03396

1. **PURPOSE** Although electric power supply system in developing countries such as ASEAN and Latin America is gradually getting large, its reliability is so low that electric outages occur frequently. This course provides the information and the knowledge on efficient and reliable power supply system as well as operation of them through introduction of Japan's current technology to meet their requirements on improving power system reliability in their countries.
2. **MAIN FEATURES OF CURRICULUM** During technical training for 5 weeks, this course provides the general information on Japan's electric power industry for the first week at Japan Electric Power Information Center in Tokyo, and then technical information on electric power system for 4 weeks at Tohoku EPCO in Sendai. The course consists of lectures, site observations and practices using simulator. The following subjects will be covered, (1) Outline of Electric Power Industry in Japan (2) Planing & Analysis Method on Electric Power System (3) Construction, Maintenance & Operation on Transmission & Transforming Facilities (4) General Assignments on Power System Operation (5) Operation & Protection on Electric Power System.
3. **QUALIFICATION OF APPLICANT** (1) Electrical engineers who are currently in charge of transmission, transformation and/or power systems at electric power companies or related organizations, with between 5 and 20years of work experience (2) University graduate or equivalent (3) Between 27 and 40 years of age
4. **TRAINING INSTITUTIONS** (1) Tohoku Branch, JICA (2) Tohoku Electric Power Co., Inc. (3) Japan Electric Power Informatino Center, Inc.

## COAL CONVERSION AND UTILIZATION TECHNOLOGY

Sep. 7, '98 - Sep. 5, '99, 5 participants

石炭転換・利用技術 J-98-03289

1. **PURPOSE** Coal is one of the most important energy sources, and the dependence on coal is expected to rise extremely high in the future in developing countries in the Pacific Rim region in particular. This course is to teach basics of all kinds of coal conversion processes through experiments, to make trainees understand the importance of energy and environmental problems, and thereby to contribute to the improvement of coal conversion techniques in consideration of environment circumstances of the Pacific RIM.
2. **MAIN FEATURES OF CURRICULUM** This course is separated 4 different courses of liquefaction, justification, confusion and ash utilization of coal, to learn basics of coal, methods of reaction experiments and all kinds of analysis through experiments.
3. **QUALIFICATION OF APPLICANT** (1) research worker in the central or a local government with more than three years but less than 10 years of experience, (2) university graduate or equivalent, (3) between 25 and 35 years of age.
4. **TRAINING INSTITUTIONS** (1) Hokkaido International Centre, Sapporo (HICS), JICA (2) Hokkaido National Industrial Research Institute
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for 4 weeks.

## SOLAR POWER GENERATION AND ITS APPLICATION SYSTEM (OCEANIAN COUNTRIES)

Sep. 14, '98 - Dec. 10, '98, 5 participants

太陽光発電及び利用の技術システム(大洋州諸国) J-98-03266

1. **PURPOSE** The purpose of this course is to provide the knowledge and information on solar power generation and its application system (electrification in solitary islands, power resources of medical facilities, storage pump etc.), in order to solve the disharmony between development and environment in participating countries, especially in Oceanic countries.
2. **MAIN FEATURES OF CURRICULUM** In this course, the following major subjects will be covered through lectures, discussions and observation trips: (1) lecture; basis of, (a) semiconductor engineering (b) ray engineering (c) battery engineering (d) electrical engineering (e) environmental engineering (2) lecture; (a) manufacturing technique (b) preservation of regional environment (3) observation of private institution applying solar power technique system (4) design the solar power generation system of minimum electric power in the specified study
3. **QUALIFICATION OF APPLICANT** (1) technical officials who are engaged in work in the field of electricity and/or energy (2) have more than 3 years' experience (3) between 25 and 45 years of age (4) university graduate majoring in science or engineering
4. **TRAINING INSTITUTIONS** (1) Osaka International Centre (OSIC), JICA (2) Faculty of Engineering, Osaka City University
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks. (50 hours)

## (PRIVATE SECTOR) BUSINESS MANAGEMENT IN THE PACIFIC BASIN COOPERATION

Jun. 15, '98 - Jul. 26, '98, 28 participants

太平洋民間協力 J-98-03327

1. **PURPOSE** The participants will be exposed to the Pacific basin cooperation in the private sector through which they are expected to understand the necessity for the trade and investment liberalization and facilitation, and the economic and technical cooperation. The intensive exposure will, in a middle and long range perspective, help them express and act in a positive and constructive manner, toward the realization of the goal (the trade and investment liberalization and facilitation) in collaboration with such international non-governmental organizations as PBEC, PECC, etc. through their respective channels.
2. **MAIN FEATURES OF CURRICULUM** The following issues are dealt with in this training course, in a manner of interactively presenting them, to the extent that the participants will recognize the necessity for the trade and investment liberalization and facilitation, and the economic and technical cooperation: (1) the prevailing situation and issues related to the trade and investment in the Pacific region (2) the characteristics of the Japanese market (3) development and environment (4) development of small and medium sized enterprises in Japan, and their present situation.
3. **QUALIFICATION OF APPLICANT** (1) those engaged in the middle level management either in the privately or the publicly owned corporations (however, not including the government officials) (2) those qualified at the university level education, (3) those who have more than three years of practical business experience, and (4) those aged under 45 years old.
4. **TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Japan Member Committee, Pacific Basin Economic Committee, (3) The Tokyo Chamber of Commerce and Industry

## CORPORATE MANAGEMENT FOR ASIAN REGION

Jul. 6, '98 - Jul. 26, '98, 12 participants

アジア企業経営 J-98-03330

1. **PURPOSE** The aim of the course is to contribute to economic growth and business expansion among private enterprises in Asia and the Pacific region by familiarizing managerial staff with key factors in Japan's economic growth, and with the phenomenon of Japanese-style business management which underpinned it. Through lectures, discussions and study visits, course participants will learn how Japanese industry, with its worldwide reputation for high-quality products, attained its present position, and about the production systems it employs.
2. **MAIN FEATURES OF CURRICULUM** Major subjects (1) present situation and future prospects of Asian and Pacific economies (2) development of the Japanese economy (3) product quality and business management methods in Japan (a) market research and product planning (b) manufacturing strategy and supporting industry (c) sales strategy and aftersale service (d) Factory management characteristics (4) presentation of country reports (5) discussion (6) final presentation
3. **QUALIFICATION OF APPLICANT** (1) executives of private enterprises interested in articles with which this course deals (e.g. activities to improve QUALITY of products.) Type of industry will not be considered (2) nominated by a business organization such as Chamber of Commerce and Industry, Federation of Industry (3) between 30 and 50 years of age
4. **TRAINING INSTITUTIONS** (1) Osaka International Centre (OSIC), JICA (2) Pacific Resource Exchange Center (PREX)
5. **REMARKS** After returning home countries, participants are requested: (1) to give presentation on the knowledge and skills gained through the seminar in the participants' countries after the course (2) to submit a report to the Osaka International Centre, JICA through a JICA office or diplomatic mission of Japan in the participants' countries with in One (1) year after the course. This report is to include to what extent ex-participants have into practice what they have learnt and the result of the presentation (method, content, a number of audience).

## LEGAL SYSTEM RELATED TO FOREIGN DIRECT

Feb. 22, '99 - Mar. 28, '99, 15 participants

投資環境法整備 J-98-03368

1. **PURPOSE** This course, offered to senior administrators directly in charge of encouraging direct investment from abroad or officials responsible for legislative formulation, aims to contribute to the institution and development of legislation designed to promote direct investment in participating countries.
2. **MAIN FEATURES OF CURRICULUM** This course consists of lectures and visits. The main themes are: **(1)** Legal aspects of Japanese corporate operation (Establishment and Dissolution, Capital Procurement, Tax and Accounting) **(2)** Japanese policy for attraction of overseas investment **(3)** case study on feasibility of direct investment **(4)** round table discussions
3. **QUALIFICATION OF APPLICANT** **(1)** university graduate or equivalent **(2)** senior government officials in charge of policy on legal aspects at their countries' Board of Investment, or responsible for legislative formulation on foreign direct investment, with professional experience of at least seven years **(3)** between 30 and 50 years of age
4. **TRAINING INSTITUTIONS** **(1)** Osaka International Centre (OSIC), JICA **(2)** Kyoto Comparative Law Center

## SEMINAR ON DISTRIBUTION SYSTEM IN THE JAPANESE MARKET

Oct. 12, '98 - Nov. 15, '98, 9 participants

日本市場マーケティングセミナー J-98-03369

1. **PURPOSE** The purpose of this seminar is to contribute to the promotion of export to Japanese market by introducing distribution systems and the marketing method in Japan.
2. **MAIN FEATURES OF CURRICULUM** This course covers; **(1)** the importance of export promotion and its influence to the country's economy **(2)** characteristics of Japanese distribution system **(3)** desirable marketing strategy to meet consumers' needs.
3. **QUALIFICATION OF APPLICANT** **(1)** college graduate or equivalent **(2)** individual in leadership position in export promotion at either central or local government or an official in business organizations, such as, the chamber of commerce and Industry, association of manufacturers or distributors, etc. **(3)** between 30 and 50 years of age
4. **TRAINING INSTITUTIONS** **(1)** Osaka International Centre (OSIC), JICA **(2)** Pacific Resource Exchange Center (PREX)

## INVESTMENT PROMOTION SEMINAR (1) (ASIAN COUNTRIES)

Apr. 16, '98 - May 24, '98, 11 participants

投資促進セミナー(1)(アジア諸国) J-98-03321

1. **PURPOSE** Direct investments from developed nations, including grants and technical transfers, are effective for stimulating industrial development of countries facing difficulties in local procurement and securing essential factors such as capital and technology. In addition, improvement of investment promotion programmes requires the cultivation of capable personnel in relevant positions of authority. This seminar is designed primarily for government officials of Asian countries, who are responsible for soliciting investments from overseas sources. Since it is essential, in receiving such investments, to understand the investor nation, a case emphasis will also be put on understanding the comprehensive or total background of Japan, including its business practices and organizational structures in Japan.
2. **MAIN FEATURES OF CURRICULUM** The main theme of this seminar is to clarify and analyze the current situation and problems of his/her own country's investment promotion.
3. **QUALIFICATION OF APPLICANT** **(1)** university graduate or equivalent **(2)** under 40 years of age **(3)** official who belongs to governmental or semi governmental organizations (e.g. investment promotion organization) with more than five years of practical experience in the administration of overseas investment
4. **TRAINING INSTITUTIONS** **(1)** Tokyo International Centre (TIC), JICA **(2)** World Trade Center Tokyo, Inc. (WTCTO)
5. **REMARKS** This course is organized for Asian countries.

## INVESTMENT PROMOTION SEMINAR (2) (LATIN AMERICAN COUNTRIES)

Jun. 25, '98 - Aug. 6, '98, 11 participants

投資促進セミナー(2)(中南米諸国) J-98-03320

1. **PURPOSE** Direct investments from developed nations, including grants and technical transfers, are effective for stimulating industrial development of countries facing difficulties in local procurement and securing essential factors such as capital and technology. In addition, improvement of investment promotion programmes requires the cultivation of capable personnel in relevant positions of authority. This seminar is designed primarily for government officials of the countries of Latin America, who are responsible for soliciting investments from overseas sources. Since it is essential, in receiving such investments, to understand the investor nation, a case emphasis will also be put on understanding the comprehensive or total background of Japan, including its business practices and organizational structures in Japan.
2. **MAIN FEATURES OF CURRICULUM** The main themes of this seminar are: **(1)** analysis of the current situation and problems of his/her own country's investment promotion **(2)** research paper writing on "Selection of Potential Japanese Investors"
3. **QUALIFICATION OF APPLICANT** **(1)** university graduate or equivalent **(2)** under 40 years of age **(3)** official who belongs to governmental or semi governmental organizations (e.g. investment promotion organization) with more than five years of practical experience in the administration of overseas investment
4. **TRAINING INSTITUTIONS** **(1)** Tokyo International Centre (TIC), JICA **(2)** World Trade Center Tokyo, Inc. (WTCTO)
5. **REMARKS** This course is organized for Latin American countries.

## MANAGEMENT OF CHAMBERS OF COMMERCE AND INDUSTRY

Nov. 17, '98 - Dec. 17, '98, 10 participants

商工会議所マネジメント J-98-03221

1. **PURPOSE** The purpose of this course is to give leading managers of Chambers of Commerce and Industry a knowledge of how to manage industrial associations and how to promote small- and medium-sized businesses. In addition, this course aims to contribute to the development of human resources that are necessary for fully augmenting the social structure, industrial activities and economic growth.
2. **MAIN FEATURES OF CURRICULUM** The following major subjects will be covered in the course during lectures in Tokyo and a field trip: (1) seminar programme on Japan's foreign trade, overseas economic cooperation, and management and activities of Chambers of Commerce and Industry (2) discussions of country reports (3) observation of activities by the Japan and Tokyo Chamber of Commerce and Industry, other related offices, and commercial facilities in Tokyo (4) study trip (5) summary, evaluation and closing ceremony.
3. **QUALIFICATION OF APPLICANT** (1) be managers/directors of sections in the Chambers of Commerce and Industry or other similar organizations, or governmental officials who are in charge of these organizations (2) be university graduates or possess equivalent knowledge (3) be under 45 years of age (4) have more than 5 years of practical experience in this field.
4. **TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) The Japan Chamber of Commerce and Industry (JCCI)

## SENIOR MANAGEMENT SEMINAR ON SUSTAINABLE INDUSTRIAL DEVELOPMENT

Oct. 19, '98 - Nov. 28, '98, 10 participants

持続可能な産業開発トップマネージメントセミナー J-98-03286

1. **PURPOSE** The purpose of this seminar is to help participants understand that industrial development can coexist with environmental conservation. Participants will also be expected to understand what is to emphasize, according to the conditions of respective countries, in order to achieve industrialization of their countries.
2. **MAIN FEATURES OF CURRICULUM** The course mainly consists of lectures, discussion and visits to companies and environmental conservation facilities. (1) environmental preservation in Kitakyushu City (2) management in Japanese companies (3) production management and cost management (4) quality control (5) maintenance, energy-saving and data processing
3. **QUALIFICATION OF APPLICANT** (1) senior production managers of enterprises or senior governmental officials who direct the industrial management (2) practical experience in the relevant field, for more than ten (10) years (3) between 35 and 50 years of age (4) university graduates
4. **TRAINING INSTITUTIONS** (1) Kitakyushu International Techno-cooperative Association (KITA) (2) JICA Kyushu International Centre

## TRADE PROMOTION POLICY SEMINAR (AFRICAN, MIDDLE EAST COUNTRIES)

Sep. 24, '98 - Nov. 5, '98, 10 participants

貿易振興政策セミナー(アフリカ・中近東諸国) J-98-03322

1. **PURPOSE** The main purpose of this seminar is to inform the participants of recent knowledge and background information in the field of international trade in connection with Japan and the Japanese, directly and indirectly stressing some successful export promotion cases executed by Japanese enterprises and organizations. Through this knowledge and information, the participants can figure out effective measures to expand the volume of their own exports in the future.
2. **MAIN FEATURES OF CURRICULUM** The main themes of this seminar are: (1) acquisition of the accurate knowledge and necessary information about the successful development of trade by Japanese enterprises (2) analysis of situation/problems of his/her own country's trade promotion (3) research paper writing on "How to Penetrate into Japanese Market - Improvement of Product or Selection of Suitable Distribution Channels"
3. **QUALIFICATION OF APPLICANT** (1) university graduate or equivalent (2) senior official who belongs to governmental or semi governmental organizations (e.g. trade promotion organization) with more than five years of practical experience in the administration of international trade (3) under 40 years of age
4. **TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) World Trade Center Tokyo, Inc. (WTCTO)
5. **REMARKS** This course is organized for African, Middle-Eastern and Caribbean countries.

## TRADE AND INVESTMENT INSURANCE

Sep. 29, '98 - Oct. 28, '98, 10 participants

貿易保険 J-98-03342

1. **PURPOSE** The purpose of this seminar is to facilitate each country's trade insurance system by providing training programs on trade insurance system and its management through presentation and demonstration to officials of governments and governmental organizations in charge of trade insurance system. The program places emphasis on helping participants, who are beginners or have no experience in the trade insurance business, to have the basic knowledge of trade insurance.
2. **MAIN FEATURES OF CURRICULUM** This course mainly consists of lectures, discussions and field studies, and covers the following; (1) the purpose, the role and the characteristics of Trade and Investment Insurance (2) the outline of Trade and Investment Insurance System in Japan (risk management, short-term insurance, claims and recoveries, and others) (3) the visits to the trade insurance related institutions and companies
3. **QUALIFICATION OF APPLICANT** (1) officials of governments or governmental organizations related to trade or trade insurance (2) with little practical experience in the trade Insurance and (3) with English knowledge.
4. **TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Japan Trade and Investment Insurance Organization (JTIO), TOKYO
5. **REMARKS** This course is organized for Asian countries.

## SUSTAINABLE TOURISM DEVELOPMENT

Aug. 17, '98 - Oct. 7, '98, 10 participants

観光開発と環境保全　J-98-03307

1. **PURPOSE** Though tourism sector generates employment opportunity and develop regional economy, tourism development should be coordinated not only with the eco-system, but also with other industries and economic infrastructure development. After the meeting of the APEC Tourism Working Group in 1995, this course is designed for participants of tourism-related agencies of APEC member countries to discuss the importance of harmonizing tourism development with environmental protection. Participants are expected to acquire the measures for developing tourism resources, analyzing regional resources, and developing sustainable tourism.
2. **MAIN FEATURES OF CURRICULUM** The course consists of lectures and observation as well as discussion, report making, and presentations. Case studies on environmentally conscious tourism sites are also included. The objectives are as follows: (1) To acquire the planning method on how to find and develop regional tourism resources (2) To acquire the method on how to analyze the relations between tourism development and other factors of regional resources, such as local industries, and infrastrucutres, etc. (3) To acquire the method on how to develop the sustainable tourism in coordination with the environment.
3. **QUALIFICATION OF APPLICANT** (1) in charge of tourism planning and development at tourism-related ministries or agencies (including cultural and historical preservation and landscape and scenery) (2) aware of the issues about environmental conservation and community participation for tourism development (3)university graduate or equivalent (4) age between 35 and 50 years old.
4. **TRAINING INSTITUTIONS** (1) Chugoku International Centre (CIC), JICA (2) International Tourism Development Institute of Japan (ITDIJ)
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for one week (25 hours).

## LOCAL EDUCATIONAL ADMINISTRATION SEMINAR (SUB-SHARAN AFRICAN COUNTRIES)

Feb. 8, '99 - Mar. 14, '99, 10 participants

地方教育行政セミナー(サブ・サハラアフリカ諸国)　J-98-03295

1. **PURPOSE** This course aims to provide an opportunity for administrators in charge of local education to understand the local educational administration system of Sapporo City, through a curriculum comprised of lectures, discussions and visits/study trips partaining to educational administration of Sapporo City and thereby to improve local educational administration in developing countries.
2. **MAIN FEATURES OF CURRICULUM** The course consists of lectures and visits/field trips. Each curriculum is organized to provide effective training from the viewpoint of both theory and practice as follows: (1) educational administration of Sapporo City (2) compulsory education (primary education and lower secondary education in Japan) (3) school and social education in Sapporo.
3. **QUALIFICATION OF APPLICANT** (1) be personnel in charge of the administration of local education in the central or local government (2) university graduate, or equivalent (3) under 45 years of age.
4. **TRAINING INSTITUTIONS** (1) Hokkaido International Centre, Sapporo (HICS), JICA (2) Sapporo Education Research Institute
5. **REMARKS** An intensive Japanese language course will be conducted prior to the seminar for all the participants for 3 weeks.

## SEMINAR FOR OFFICERS OF WOMEN'S EDUCATION

Feb. 23, '99 - Mar. 21, '99, 9 participants

女性の教育問題担当官セミナー　J-98-03285

1. **PURPOSE** The purpose of the seminar is (1) to study the countermeasures to expand the educational opportunity for women in developing countries through the lectures and discussions of Japan's current educational programing system, (2) to exchange views and information on various issues
2. **MAIN FEATURES OF CURRICULUM** The seminar covers the following: (1) lectures and observations (a) present state of educational system and reform in Japan (b) drawing up of curriculums and the course of study (c) teacher training in Japan, etc. (d) visits to kindergarten, elementary school (2) discussions focusing on several topics relating to education (3) country report presentation and discussion to identify various problems and measures to improve the education for women in participating countries (a) current situation of women (b) current situation in education (c) important issues of women's education
3. **QUALIFICATION OF APPLICANT** (1) a government, and an administrative officer in charge of curriculum development/ planning and extension of education, especially for women (2) university graduate or equivalent (3) have more than five years of occupational experience
4. **TRAINING INSTITUTIONS** (1) Institute for International Cooperation (IFIC), JICA (2) Lifelong Learning Bureau, Ministry of Education, Science and Culture (3) National Women's Education Centre

## SCIENCE EXPERIMENTS IN PRIMARY EDUCATION (SOUTH ASIAN COUNTRIES)

Aug. 24, '98 - Nov. 28, '98, 8 participants

小学校における理科実験教育(南西アジア諸国)　J-98-03297

1. **PURPOSE** The course is designed for teachers' trainers for primary education. The course will introduce science practices utilizing simple experiment equipment and materials at the *Obihiro Youth Science Museum. Participants will also join in extra-curricular school activities and visit various education facilities. The purpose of this course is to acquire knowledge and techniques for primary science education. (i.e., instruction of science education, performing of experiments) *The Obihiro Youth Science Museum is a community-based facility established by the Obihiro City Board of Education, for the purpose of providing the opportunity for youths (primary school students) to perform science experiments outside the school environment.
2. **MAIN FEATURES OF CURRICULUM** The following major subjects will be covered in the course; (1) overview of Japanese education (2) introduction of primary science education (3) education taking place in science-activity facilities for children
3. **QUALIFICATION OF APPLICANT** (1) be a teachers' trainer for primary education (2) have at least five years' experience in the field (3) be at least high-school graduates or equivalent, and be holder of certificate for teaching primary education (4) between 25 and 45 years of age
4. **TRAINING INSTITUTIONS** (1) Hokkaido International Centre, Obihiro (HICS), JICA (2) Northern Regions Center (NRC)
5. **REMARKS** A compulsory intensive Japanese course will be conducted prior to the technical training for three weeks (75 hours).

## AUTOMOTIVE MAINTENANCE ENGINEERING II

Sep. 7, '98 - Mar. 14, '99, 10 participants

自動車整備技術 II　　J-98-03303

1. **PURPOSE** This course is designed for technical instructors who are engaged in vocational training. The purpose of this course is to provide them with expertise on automotive maintenance, and thereby to improve their knowledge and skills in respective countries.
2. **MAIN FEATURES OF CURRICULUM** This course consists of lectures and practices on (1) basics of automotive maintenance (2) engine maintenance method (3) electric equipment method (4) car body maintenance method, and (5) industrial engineering.
3. **QUALIFICATION OF APPLICANT** (1) technical instructor in the field of automotive maintenance (2) have more than 5 years' experience (3) under 35 years of age (4) graduate from technical high school (5) have sufficient abilities of speaking and reading English.
4. **TRAINING INSTITUTIONS** (1) Osaka International Centre (OSIC), JICA (2) Higashi-Yodogawa Advanced Vocational Training School (HAVOT)
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks.

## REMOTE SENSING TECHNOLOGY (ADVANCED)

Oct. 20, '98 - Nov. 29, '98, 5 participants

リモートセンシング技術（上級）　　J-98-03355

1. **PURPOSE** The purpose of the course is to introduce the application technology and advanced digital processing technology covering remote sensing data.
2. **MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on workshop using computers. The following are the major subjects to be covered in the course. (1) lectures (2) practice of digital analysis (a) analysis by personal computers (b) analysis with digital image processing systems (3) observation study
3. **QUALIFICATION OF APPLICANT** (1) university graduate, or equivalent with a fundamental knowledge of physics and mathematics (2) researchers or engineers in remote sensing application fields, such as country planning, agriculture, forest management and mapping (3) under 45 years of age (4) person having completed the JICA Group Training Course in "Remote Sensing Technology (fundamental) or having experienced investigation or activities in remote sensing application for more than 3 years.
4. **TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Remote Sensing Technology Center of Japan (RESTEC)

## REMOTE SENSING TECHNOLOGY (FUNDAMENTAL) II

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

リモートセンシング技術（基礎）II　　J-98-03333

1. **PURPOSE** The purpose of the course is to transfer fundamental knowledge and technology on satellite remote sensing, mainly focused on digital analysis, to the researchers and engineers from developing countries, through lectures, practices, field trips, and so on.
2. **MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on workshop using computers. The following are the major subjects to be covered in the course. (1) basic theory (2) sensor satellite (3) image processing (4) application (5) ground truth (6) workshop: digital image analysis, geometric correction and GIS, personal computer processing, personal computer system and programming
3. **QUALIFICATION OF APPLICANT** (1) university graduate, or equivalent with fundamental knowledge of physics and mathematics (2) researcher or engineer in remote sensing application fields, such as country planning, agriculture, forest management and mapping (3) under 35 years of age
4. **TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Remote Sensing Technology Center of Japan (RESTEC)

## HUMAN-RADIATION INTERFACE; APPLICATION AND SAFETY OF RADIATION IN MEDICAL, BIOLOGICAL, AND ENVIRONMENTAL SCIENCES

Oct. 20, '98 - Nov. 21, '98, 8 participants

ヒト－放射線インターフェース：医学・生物学・環境科学における放射線の利用と安全　　J-98-03334

1. **PURPOSE** The purpose of this course is to give the participants knowledge on Human-Radiation Interface in view of medical, biological and environmental sciences and to transfer the latest techniques through lectures, practices of one's specialty and interest, study tours and seminars to promote sound and rational development in the field of application and safety control of radiation in each developing country by means of: (1) systematic and fundamental knowledge on radiation use for medical biology and environmental radiation protection (2) understanding of latest knowledge and techniques (3) human resource development in this radiation field in line with each country's condition.
2. **MAIN FEATURES OF CURRICULUM** (1) Lectures: Radiation and human, energy industries and radiation, the past and future of radiation, etc. (2) Experiments: Basic test of radiometry, radiation medicine, radiation biology, etc. (3) Observation: Exercises of radiation health control, industries concerned, radiotherapy, etc. (4) Practice: Select one of followings practices of clinical radiotherapy, diagnosis of nuclear medicine, radiation health control, measurement of environmental radiation, radiation individual biology, etc.
3. **QUALIFICATION OF APPLICANT** (1) medical doctor of radiologist/ radiological technologist or be engaged with radiologists (University Graduate or equivalent) (2) resume the same field of work after returning home (3) under 50 years of age
4. **TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) National Institute of Radiological Sciences, Science and Technology Agency
5. **REMARKS** This course is conducted only for RCA member countries.
6. **OTHER** (1) to understand biological influences on the level of molecule, cell and individual (2) to learn the actual condition, principle and procedures of safety protection in natural and work environment (3) to acquire clinical knowledge, skills of the principle of therapy and diagnosis by radiation of every kind such as X-ray, neutron ray and baryon, and radio medicine (4) to understand and apply the above researches, and to acquire the latest knowledge concerning each participant's present specialty and further needs, and to obtain the ability to introduce the latest techniques in a required way.

## CULTURAL ASSET PRESERVATION AND RESTORATION TECHNOLOGY

Feb. 15, '99 - Jul. 11, '99, 6 participants

文化財修復整備技術 J-98-03367

1. **PURPOSE** To contribute to the preservation and restoration of cultural assets in participating countries by introducing technology accumulated in Kyoto, concentrating on restoration of wooden cultural assets. As a rule, stone cultural assets are not focused in this training course.
2. **MAIN FEATURES OF CURRICULUM** The course consists of a common programme for all participants and a following specialized training programme. This year specialized training programme will focus on wooden buildings and townscapes.
3. **QUALIFICATION OF APPLICANT** (1) leading technical experts with at least three years' experience in the field of cultural asset preservation and restoration technology (2) under 40 years of age
4. **TRAINING INSTITUTIONS** (1) Osaka International Centre (OSIC), JICA (2) The Agency for Cultural Affairs (3) Faculty of Engineering and Faculty of Agriculture, Kyoto University (4) Kyoto National Museum, ACA (5) Kyoto Prefectural Archaeological Research Center (6) Kyoto City Archaeological Research Institute Incorporation (7) Kyoto Kagaku Co., Ltd. (8) University of Shiga Prefecture (9) Kyoto University of Art and Design
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks.

## MUSEUM MANAGEMENT TECHNOLOGY (COLLECTION, PRESERVATION, EXHIBITION)

Aug. 3, '98 - Jan. 20, '99, 7 participants

博物館技術(収集、保存、展示) J-98-03232

1. **PURPOSE** The purpose of this course is to provide comprehensive knowledge on the role and function of contemporary museums both in theory and practice, in order to train experts who are expected to take leading roles in administration and management of museums which will contribute to the promotion of tourism and will be the center of educational and cultural activities.
2. **MAIN FEATURES OF CURRICULUM** This course includes lectures and practices on the role and function of modern museums by introducing accumulated knowledge and experience in Japan: (1) introduction of museology (2) filing and recording (3) exhibition technique (4) preservation (5) public relation and educational activity (6) facilities and equipments.
3. **QUALIFICATION OF APPLICANT** (1) specialist with at least 3 years of experience in the field of management and administration of museums (2) university graduate or person with equivalent technical qualification in the field (3) between 25 and 45 years of age.
4. **TRAINING INSTITUTIONS** (1) Osaka International Centre (OSIC), JICA (2) National Museum of Ethnology (3) Japan International Cooperation Center.
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for 3 weeks (75 hours).

## LEPROSY RESEARCH

Apr. 6, '98 - Dec. 20, '98, 5 participants

ハンセン病予防医学研究 J-98-03318

1. **PURPOSE** The purpose of the course is to enable participants to pursue further theoretical and experimental studies on leprosy. They will learn up-to-date knowledge and technology indispensable to leprosy control through assigned laboratory research work. The acquired knowledge, technology, and the cultivated research mind will be useful not only for leprosy control but will also contribute to the development of biomedical sciences in participating countries.
2. **MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on laboratory research work. Each participant is to take one of the following subjects for his/her specific study. (1) serology and seroepidemiology of leprosy and Mycobacterium leprae infection (2) development of histopathological techniques for early diagnosis of leprosy (3) kinetics of M. leprae with PCR (Polymerase Chain Reaction) (4) cell-mediated immunity of leprosy (5) development of antileprous chemotherapeutics using nude mice
3. **QUALIFICATION OF APPLICANT** (1) a medical doctor or a graduate from a faculty of science, pharmacy, agriculture, veterinary medicine, medical technology or equivalent (2) presently engaged in research or clinical work on leprosy in an organization (3) less than 40 years of age
4. **TRAINING INSTITUTIONS** (1) Hachioji International Training Centre (HITC), JICA (2) National Institute for Leprosy Research (NILR)

## VIROLOGICAL DIAGNOSIS TECHNIQUE FOR POLIO ERADICATION PROGRAMME

Aug. 17, '98 - Sep. 13, '98, 7 participants

ポリオ根絶計画ウィルス検査技術 J-98-03317

1. **PURPOSE** The purpose of this training course is to provide the participants with; (1) standard technique of cell culture (2) standard technique of isolation and typing of poliovirus (3) introduction to molecular epidemiology of poliomyelitis, and (4) information on the outline of polio vaccine control.
2. **MAIN FEATURES OF CURRICULUM** In this course the emphasis is put on lectures and laboratory experiments. The main themes are: (1) lecture (a) global eradication of poliomyelitis (b) maintenance and quality control of cell cultures (c) laboratory biosafety etc. (2) practical training (a) preparation of media and cell cultures (b) identification of polioviruses (c) determination of neutralizing antibodies to polioviruses (d) detection of viral antigen and antibody by ELISA (e) amplification of virus genome by PCR etc.
3. **QUALIFICATION OF APPLICANT** (1) presently a technical staff member of microbiology laboratory
4. **TRAINING INSTITUTIONS** (1) Hachioji International Training Centre (HITC), JICA (2) National Institute of Health (Murayama Annex)

## HISTOPATHOLOGICAL DIAGNOSIS OF EARLY GASTRIC AND COLORECTAL CARCINOMAS

Aug. 18, '98 - Oct. 26, '98, 7 participants

早期胃・大腸癌の病理組織診断 J-98-03324

1. **PURPOSE** The purpose of the course is to introduce participants to recent concepts and techniques in gastroenterology, especially gastrointestinal pathology, so that they will gain broader perspectives and clues for their future research as well as diagnosis techniques.
2. **MAIN FEATURES OF CURRICULUM** This course consists of common curriculum for all participants and specific practical training for each participant, to cover the following themes respectively. (1) recent gastrointestinal pathology in Japan (common curriculum mainly made up of lectures, seminars, microscopic examinations and conferences at university) (2) histological diagnosis of surgical specimens (practical training at designated hospital)
3. **QUALIFICATION OF APPLICANT** (1) established pathologist (2) university medical school graduate or equivalent
4. **TRAINING INSTITUTIONS** (1) Tokyo International Centre (TIC), JICA (2) Tokyo Medical and Dental University Faculty of Medicine, Pathology Department

## COMMUNITY-BASED CANCER PREVENTION

Mar. 15, '99 - May 31, '99, 7 participants

地域がん(癌)予防対策 J-98-03384

1. **PURPOSE** To provide with opportunities to acquire basic knowledge of epidemiology, and the techniques for cancer investigation and research, in order to enhance the cancer prevention activities in participating countries.
2. **MAIN FEATURES OF CURRICULUM** The course consists of lectures, practices and observations. Main topics are (1) introduction of epidemiology (2) introduction of cancer prevention (3) investigation of cancer (measuring method, case control study, cohort study) (4) primary cancer prevention (5) secondary cancer prevention (6) action plan for cancer prevention
3. **QUALIFICATION OF APPLICANT** (1) a doctor or a public health nurse engaged in cancer prevention for more than 5 years (2) currently working in the field of public health or participating in public health training program (3) under '45' years of age.
4. **TRAINING INSTITUTIONS** (1) Nagoya International Training Centre (NITC), JICA (2) Aichi Cancer Center Research Institute, Aichi Prefectural Government
5. **REMARKS** A compulsory intensive Japanese language course will be conducted prior to the technical training for two weeks (50 hours).

## CONTROL OF ENDEMIC DISEASES (LABORATORY AND FIELD TECHNIQUES IN ECHINOCOCCOSIS/HYDATIDOSIS) (ASIA, LATIN AMERICAN COUNTRIES)

Jan. 11, '99 - Mar. 14, '99, 5 participants

地域流行病対策(エキノコックス症試験検査技術)(中南米諸国) J-98-03234

1. **PURPOSE** This course is designed to provide opportunities to obtain basic and practical knowledge and techniques on echinococcosis to researchers and medical technicians who are engaged in this field in its prevalent areas for the purpose of improving the situation of public health on the whole.
2. **MAIN FEATURES OF CURRICULUM** In this course, the emphasis is put on lectures, laboratory experiments and field work. It mainly covers; (1) measures for echinococcosis in Hokkaido (2) basic and applied techniques of diagnosis in the laboratory and epidemiological survey (3) practical training in public health care centers and meat inspection centers (4) hygiene and medical administration of regional health care
3. **QUALIFICATION OF APPLICANT** (1) be a university graduate or equivalent (2) be presently engaged in examination or research work of echinococcosis (3) have over two years' experience in this field (4) be over 25 and under 40 years of age.
4. **TRAINING INSTITUTIONS** (1) Hokkaido Institute of Public Health (2) Hokkaido International Centre, Sapporo (HICS), JICA.

## CLINICAL COURSE IN UROLOGY

Nov. 4, '98 - Nov. 23, '98, 5 participants

泌尿器科臨床研修 J-98-03381

1. **PURPOSE** This course provides participants a glimpse of the art urology including minimum invasive surgery along with classical urology, hemodialysis and renal transplantation. This is only an introduction, however, this experience may hopefully provide participants to learn to know how to get access to more detail in urology and to promote mutual exchange of ideas in urology.
2. **MAIN FEATURES OF CURRICULUM** We welcome you to see updated clinical urology in Japan. You can clinical confefence, make a round to see inpatients with our staff, and see outpatient clinic, hemodialysis and surgery. (1) Urological Examination: (a) Endoscopic examination (b) Urodynamic study (c) Ultrasonography (2) Surgery: (a) Mnimally invasive surgery (b) Open Surgery
3. **QUALIFICATION OF APPLICANT** (1) licensed medical doctor authorized by their government, and should have a clinical experience with more than 3 years (2) under 35 years of age (3) be presently engaged in urology or eager to be specialized in urology
4. **TRAINING INSTITUTIONS** (1) Okinawa International Centre (OIC), JICA (2) College of Medicine, University of the Ryukyus