

THE DEPARTMENT OBJECTIVES

Due to the fast pace of development that is witnessed in the Kingdom in the recent years, there has been a considerable need for highly qualified graduates at the intermediate level. The associate degree program in Electronic Technology which is being developed at the Riyadh college of Technology intends to fill this gap specifically. Its goal is to form "Assistant Engineers", in the areas of Industrial Electronics & Control, Communications, and Computer Technology who will be a link between the engineers on one side and the technicians on the other side.

The department aims at providing the students with:

- Technical skills and hand on experimentation on typical equipment that they will encounter in their practical life so that they shall be able to carry out implementation, operation, maintenance and repair tasks of highly sophisticated modern electronic equipment.
- A good understanding of basic concepts in his area of specialization and the ability to analyze cause effect relationship and determine origins of malfunctions and decide on the appropriate repair tasks.

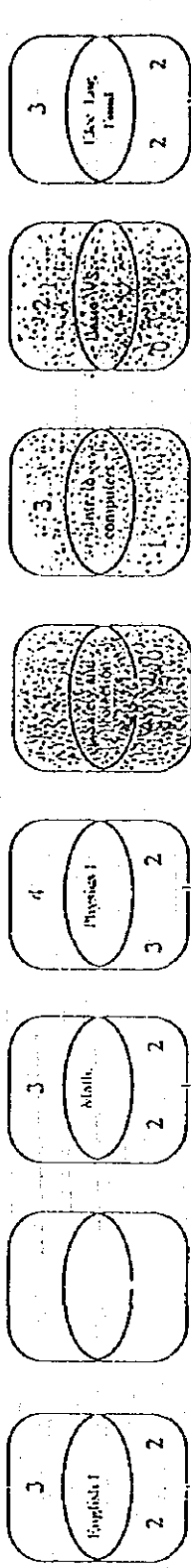
OBJECTIVES OF THE INDUSTRIAL ELECTRONIC AN
CONTROL PROGRAM

The objective of the Industrial Electronics and Control program is to give the student the necessary qualifications to enable them to be a link between the engineer on one side and the laborers and technicians on the other side.

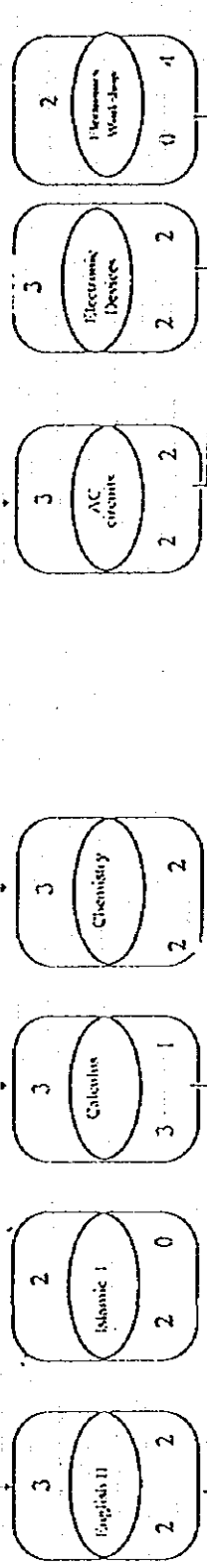
The program aims at providing the students with:

- A sound training on typical equipment that they will encounter in their practical life to the point of being capable of carrying out practical tasks by himself,
- A good understanding of basic concepts in the areas of Industrial Electronics and Control so that he can communicate with ease with the engineer, and comprehend clearly his duties and tasks,
- The ability to communicate his knowledge to technicians and laborers,
- A good grasp of the computer both as a modern problem solving tool and an efficient equipment for monitoring and controlling modern industrial processes

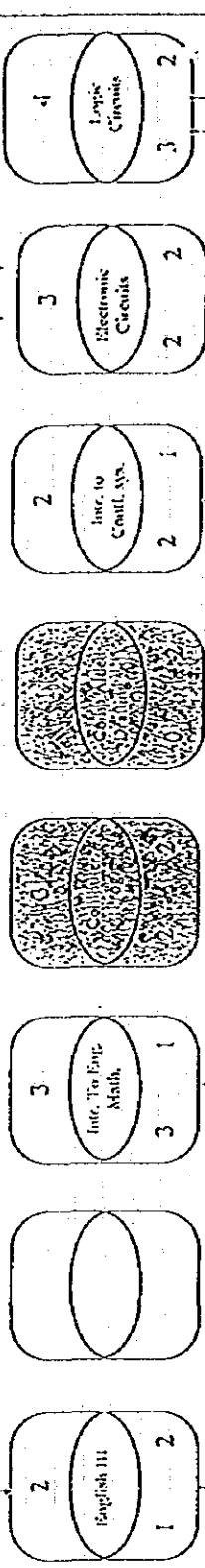
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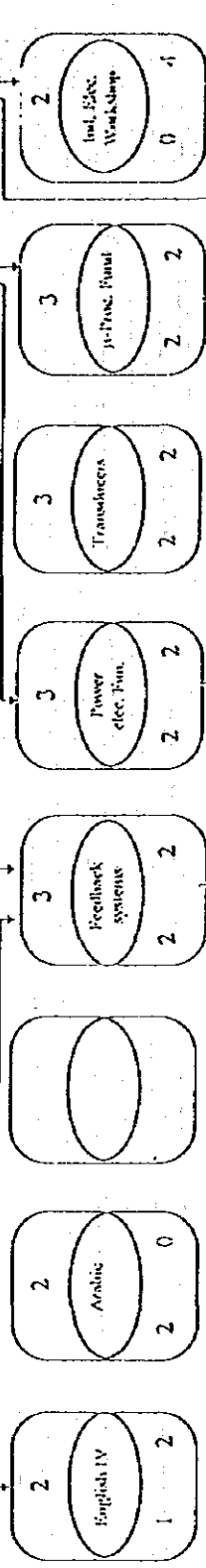
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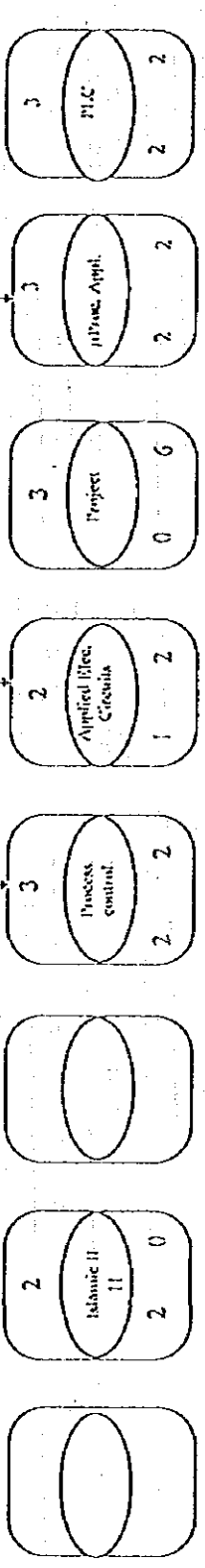
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- Honorary
- Home Science & Health
- Technical Courses

INDUSTRIAL ELECTRONICS AND CONTROL

**ELECTRONIC TECHNOLOGY DEPARTMENT
INDUSTRIAL ELECTRONICS AND CONTROL SECTION**

Semester Plan
GSS Graduates
Semester : I

Course No	Course Title	C	L	E	W	S.U	contact h/w
	English I	2	2			3	4
	Safety and Protection	1				1	1
	Introduction to Computer	1	4			3	5
	Mathematics	3		1		3	4
	Physics	3	2			4	5
	Elec. Eng. Fundamental	2	2			3	4
	Basic Workshop				4	2	4
	Total	12	10	1	4	19	27

Semester Plan
ISS Graduates
Semester : I

Course No	Course Title	C	L	E	W	S.U	cont.h/w
	English ✓	2	2			3	4
✓	Physics	4	2			5	6
	Introduction to Computer	1	4			3	5
	Mathematics	4	2			4	6
	Safety and Protection	1				1	1
	Elec. Eng. Fundamental	2	2			3	4
	Total	14	12			19	27

W: Workshop, C: Lecture Session, L: Lab, E: Exercise, T: Training, S.U: Study Unit

ELECTRONIC TECHNOLOGY DEPARTMENT
INDUSTRIAL ELECTRONICS AND CONTROL SECTION

Semester Plan
 Semester : II

Course No	Course Title	C	L	E	W	S.U	contact h/w
	English II	2	2			3	4
	Islamic Culture I	2				2	2
	Calculus	3		1		3	4
	Chemistry	2	2			3	4
	Electronic Devices	2	2			3	4
	Electric Circuits	2	2			3	4
	Electronics Workshop				4	2	4
	Total	13	6	2	4	19	26

Semester Plan
 Semester : III

Course No	Course Title	C	L	E	W	S.U	cont.h/w
	English III	1	2			2	3
	Computer Programming	2	2			3	4
	Computer Aided Drafting		2			1	2
	Intr. To Engineering Math	3		1		3	4
	Introd. to Control System	2		1		2	3
	Logic Circuits	3	2			4	5
	Electronic Circuits	2	2			3	4
	Total	13	10	2		18	25

W: Workshop, C: Lecture Session, L: Lab, E: Exercise, T: Training, S.U: Study Unit

ELECTRONIC TECHNOLOGY DEPARTMENT
INDUSTRIAL ELECTRONICS AND CONTROL SECTION

Semester Plan
Semester : IV

Course No	Course Title	C	L	E	W	S.U	cont.h/w
	English IV	1	2			2	3
	Arabic	2				2	2
	Control System Analysis	2	2			3	4
	Microprocessor Fundamental	2	2			3	4
	Power Elec. Fundamentals	2	2			3	4
	Transducers	2	2			3	4
	Industrial Electronics WS				4	2	4
	Total	11	10		4	18	25

Semester Plan
Semester : V

Course No	Course Title	C	L	E	W	S.U	cont.h/w
	Islamic II	2				2	2
	Programmable Logic Controllers	2	2			3	4
	Process Control	2	2			3	4
	μ P Applications	2	2			3	4
	Applied Electronic Circuits	1	2			2	3
	Project				4	3	4
	Total	9	8		4	16	21

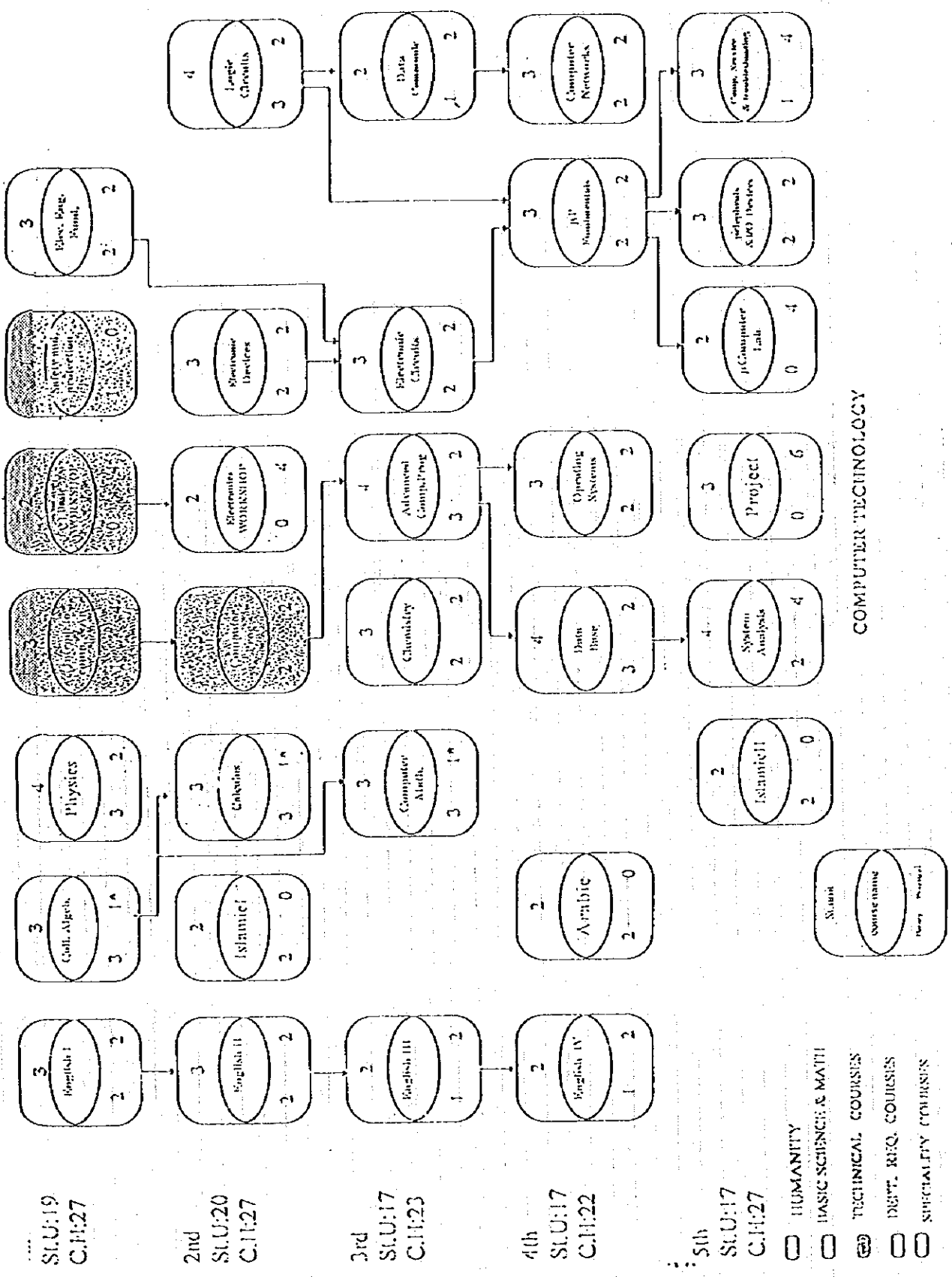
W: Workshop, C: Lecture Session, L: Lab, E: Exercise, T: Training, S.U: Study Unit

(2) コンピュータ技術学科

OBJECTIVES OF THE COMPUTER TECHNOLOGY PROGRAM

The objective of the computer technology program is to give the students the necessary qualifications to enable them to:

- clearly understand the hardware of computer systems and their peripherals in order to perform Installation, operation, organization and maintenance of computer systems,
- carry out step by step logical reasoning in problem solving and use of software programming techniques,
- Analyze system functions and implement necessary data bases to automate them,
- deal with computer networks in terms of operation, maintenance, standards, devices, cabling, connections and configurations.



COMPUTER TECHNOLOGY

- HUMANITY
- BASIC SCIENCE & MATH
- @ TECHNICAL COURSES
- DEPT. REQ. COURSES
- SPECIALTY COURSES

Semester Plan

Semester : I

Department : Electronic Technology

Major : Computer Technology

Course No	Course Title	C	L or E	W/E	S.U	cont.h/w
	English I	2	2		3	4
	Physics	3	2		4	5
	Coll. Algebra	3	1		3	4
	Intro. to Comp. & App	1	4		3	5
	Basic Workshop			4	2	4
	Safety and Protection	1			1	1
	Electrical Eng. Fund.	2	2		3	4
	Total	12	11	4	19	27

Semester Plan

Semester : II

Department : Electronic Technology

Major : Computer Technology

Course No	Course Title	C	L or E	W/E	S.U	cont.h/w
	English II	2	2		3	4
	Islamic I	2			2	2
	Calculus	3	1		3	4
	Computer Programming	2	2		3	4
	Electronic Devices	2	2		3	4
	Electronics Workshop			4	2	4
	Logic Circuit	3	2		4	5
	Total	14	9	4	20	27

W: Workshop, C: Lecture Session, L: Lab, E: Exercise, T: Training, S.U: Study Unit

Semester Plan
 Semester : III
 Department : Electronic Technology
 Major : Computer Technology

Course No	Course Title	C	L or E	W/E	S.U	cont.h/w
	English III	1	2		2	3
	Computer Math.	3	1		3	4
	Chemistry	2	2		3	4
	Advanced Comp. Prog.	3	2		4	5
	Electronic Circuits	2	2		3	4
	Data Communications	1	2		2	3
	Total	12	11		17	23

Semester Plan
 Semester : IV
 Department : Electronic Technology
 Major : Computer Technology

Course No	Course Title	C	L or E	W/E	S.U	cont.h/w
	English IV	1	2		2	3
	Arabic	2			2	2
	Data Base	3	2		4	5
	Operating Systems	2	2		3	4
	uP Fundamentals	2	2		3	4
	Computer Network	2	2		3	4
	Total	12	10		17	22

W: Workshop, C: Lecture Session, L: Lab, E: Exercise, T: Training, S.U: Study Unit

Semester Plan

Semester : V

Department : Electronic Technology

Major : Computer Technology

Course No	Course Title	C	L or E	W/E	S,U	cont.h/v
	Islamic II	2			2	2
	System Analysis	2	4		4	6
	µComputer Lab.		4		2	4
	Peripheral & I/O Devices	2	2		3	4
	Computer Service and Troubleshooting	1	4		3	5
	Project		6		3	6
	Total	7	20		17	27

W: Workshop, C: Lecture Session, L: Lab, E: Exercise, T: Training, S.U: Study Unit

Department : Electronic Technology
 Major : Computer Technology
 Humanity courses

Course No	Course Title	C	L or E	W/E	S.U	cont.h/w
	English I	2	2		3	4
	English II	2	2		3	4
	English III	1	2		2	3
	English IV	1	2		2	3
	Islamic I	2			2	2
	Islamic II	2			2	2
	Arabic	2			2	2
	Total	12	8		16	20

Department : Electronic Technology
 Major : Computer Technology
 Basic Science & Mathematics

Course No	Course Title	C	L or E	W/E	S.U	cont.h/w
	Coll. Algebra	3	1		3	4
	Calculus	3	1		3	4
	Computer Math.	3	1		3	4
	Physics	3	2		4	5
	Chemistry	2	2		3	4
	Total	14	7		16	21

W: Workshop, C: Lecture Session, L: Lab, E: Exercise, T: Training, S.U: Study Unit

Department : Electronic Technology
 Major : Computer Technology
 Technical courses

Course No	Course Title	C	L or E	W/E	S.U	cont.h/w
	Intro. to Comp. & App.	1	4		3	5
	Computer Programming	2	2		3	4
	Basic Workshop			4	2	4
	Safety and Protection	1			1	1
	Total	4	6	4	9	14

Department : Electronic Technology
 Major : Computer Technology
 Department Req. Courses

Course No	Course Title	C	L or E	W/E	S.U	cont.h/w
	Elec. Eng. Fundamentals	2	2		3	4
	Electronic Devices	2	2		3	4
	Electronic Circuits	2	2		3	4
	Logic Circuits	3	2		4	5
	µP Fundamentals	2	2		3	4
	Electronics Workshop			4	2	4
	Total	11	10	4	18	25

W: Workshop, C: Lecture Session, L: Lab, E: Exercise, T: Training, S.U: Study Unit

Department : Electronic Technology
 Major : Computer Technology
 Specialty Courses

Course No	Course Title	C	L or E	W/E	S.U	cont.h/w
	Advanced Comp. Prog.	3	2		4	5
	Data Communications	1	2		2	3
	Data Base	3	2		4	5
	Operating Systems	2	2		3	4
	Computer Networks	2	2		3	4
	System Analysis	2	4		4	6
	uComputer Lab.		4		2	4
	Peripherals & I/O Devices	2	2		3	4
	Computer Service & Troubleshooting	1	4		3	5
	Project		6		3	6
	Total	16	30		31	46

W: Workshop, C: Lecture Session, L: Lab, E: Exercise, T: Training, S.U: Study Unit

(3) 通信技術学科

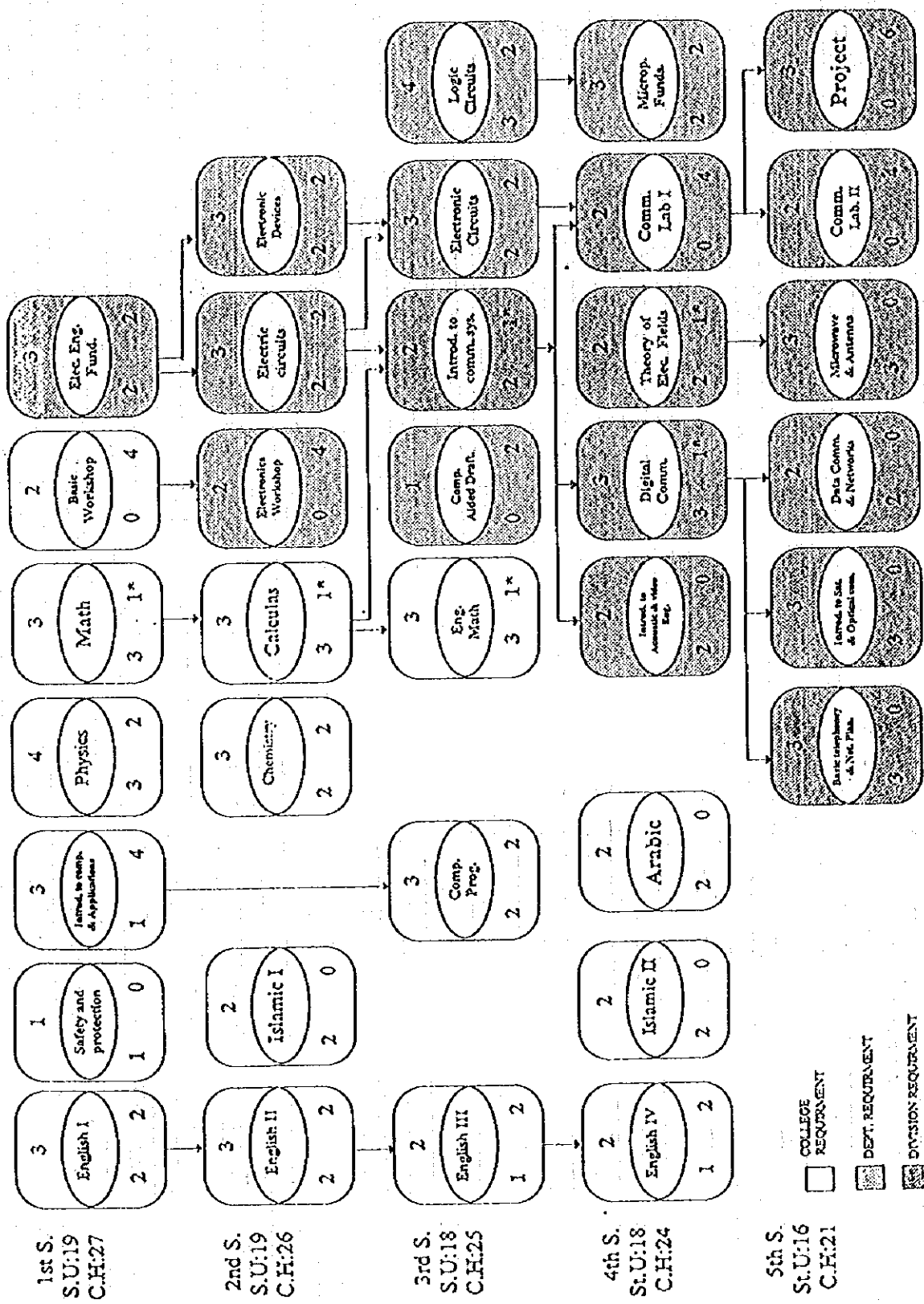
The program Objectives (Communications Division) :

This program is designed to give a broad knowledge in the different fields of Communication systems with emphasizing on practical aspects and applications.

The graduate of this program should be capable to fit within any maintenance or operation job in the field of Communication systems.

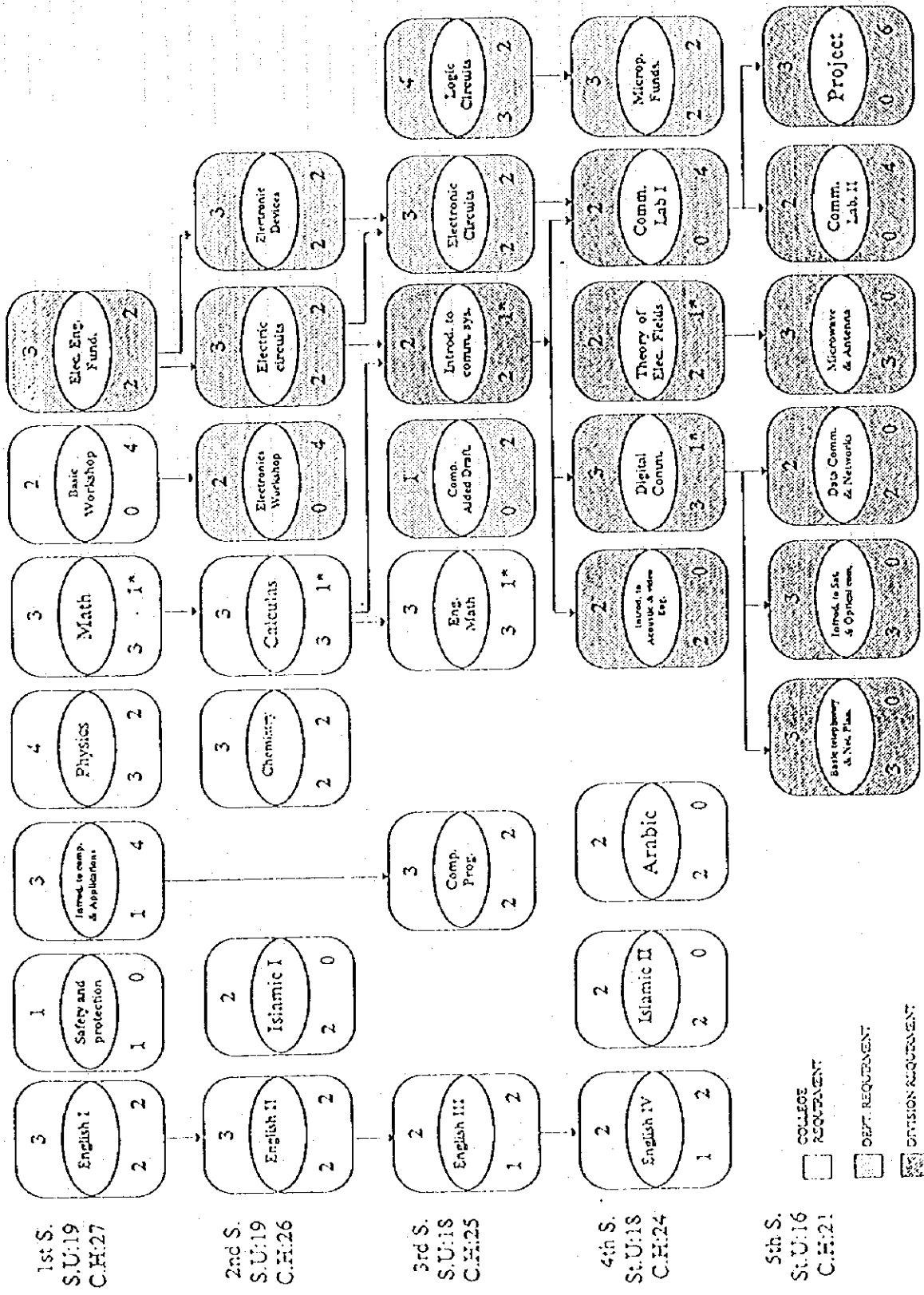
The program aims at providing the student with:

- A sound training on typical Communication equipment that he will encounter in their practical life to the point of being capable of carrying out practical tasks by himself.
- A good understanding of the basic concepts in the different areas of Communications so that he comprehend clearly his duties and tasks,
- The ability to communicate his knowledge and skills to less qualified personnel such as technicians and laborers,
- The ability to install, operate, maintain and repair various communication equipment.



COMMUNICATIONS TECHNOLOGY

- COLLEGE REQUIREMENT
- DEPT. REQUIREMENT
- DIVISION REQUIREMENT
- * - EMERGENCY



COMMUNICATIONS TECHNOLOGY

Semester Plan**Semester : I****Department : Electronic Technology****Major : Communications Technology**

Course No	Course Title	C	L / E	W	S.U	cont. II
	English I	2	2		3	4
	Safety and Protection	1			1	1
	Introd. to Comp. & Applics.	1	4		3	5
	Physics	3	2		4	5
	Pre. WS			4	2	4
	Electrical Eng. Fundamentals	2	2		3	4
	Mathematics	3	1		3	4
	Total	12	11	4	19	27

Semester Plan**Semester : II****Department : Electronic Technology****Major : Communications Technology**

Course No	Course Title	C	L / E	W	S.U	cont. II
	English II	2	2		3	4
	Calculus	3	1		3	4
	WS I			4	2	4
	Electric Circuits	2	2		3	4
	Electronic Devices	2	2		3	4
	Chemistry	2	2		3	4
	Islamic Culture I	2			2	2
	Total	13	9	4	19	26

W: Workshop, C: Lecture Session, L: Lab, E: Exercise, T: Training, S.U: Study Unit

Semester Plan
 Semester : III
 Department : Electronic Technology
 Major : Communications Technology

Course No	Course Title	C	L/E	W	S.U	cont. H
	English III	1	2		2	3
	Computer Programming	2	2		3	4
	Eng. Mathematics	3	1		3	4
	Computer Aided Drafting		2		1	2
	Introduction to Comm.Sys.	2	1		2	3
	Electronic Circuits	2	2		3	4
	Logic Circuits	3	2		4	5
	Total	13	12		18	25

Semester Plan
 Semester : IV
 Department : Electronic Technology
 Major : Communications Technology

Course No	Course Title	C	L/E	W	S.U	cont. H
	English IV	1	2		2	3
	Arabic	2			2	2
	Islamic II	2			2	2
	Introd. to Acoustic & Video Eng.	2			2	2
	Digital Communications	3	1		3	4
	Theory of EM Fields	2	1		2	3
	μ P and μ C Funds.	2	2		3	4
	Communications Lab. I		4		2	4
	Total	14	10		18	24

W: Workshop, C: Lecture Session, L: Lab, E: Exercise, T: Training, S.U: Study Unit

Semester Plan

Semester : V

Department : Electronic Technology

Major : Communications Technology

Course No	Course Title	C	L/E	W	S.U	cont. H
	Basic Telephony & Network Plan.	3			3	3
	Introd. to Sat. & Optical Comm.	3			3	3
	Data Comm. & Networks	2			2	2
	Microwave & Antenna	3			3	3
	Communications Lab. II		4		2	4
	Project		6		3	6
	Total	11	10		16	21

W: Workshop, C: Lecture Session, L: Lab, E: Exercise, T: Training, S.U: Study Unit

5 合同評価ミニッツ

THE MINUTES OF MEETINGS
BETWEEN
THE JAPANESE EVALUATION TEAM AND
THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF THE KINGDOM OF SAUDI
ARABIA
ON THE TECHNICAL COOPERATION
FOR THE PROJECT FOR THE TECHNICAL ELECTRONICS INSTITUTE IN RIYADH
IN THE KINGDOM OF SAUDI ARABIA

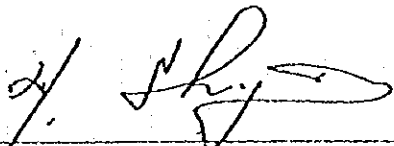
The Japanese Evaluation Team (hereinafter referred to as "the Team") organized by Japan International Cooperation Agency (JICA) headed by Mr. Hiroshi SHIOJIRI visited the Kingdom of Saudi Arabia for the purpose of evaluating the Follow-Up Cooperation of the Project for the Technical Electronics Institute in Riyadh (hereinafter referred to as "the Project").

The Follow-Up Cooperation includes the Institute Program and the Upgrading Program.

After the Joint Evaluation of the Project, the Team discussed with the concerned authorities of the Kingdom of Saudi Arabia the matters concerning the successful implementation of the Project.

As a result of the discussions, both sides mutually agreed upon the matters referred to in the document attached hereto.

Riyadh, March 12, 1996



Mr. Hiroshi SHIOJIRI
Leader
Japanese Evaluation Team
Japan International Cooperation Agency
Japan



Mr. Abdulmohsin AL-THUWAINI
Deputy Governor
General Organization for Technical Education
and Vocational Training
The Kingdom of Saudi Arabia

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1. INTRODUCTION

1-1 The Evaluation Team

The Japanese Evaluation Team (hereinafter referred to as "the Japanese Team") organized by Japan International Cooperation Agency (hereinafter referred to as "JICA"), headed by Mr. Hiroshi Shiojiri, visited the Kingdom of Saudi Arabia from 5 to 14 March 1996 for Joint Evaluation with the General Organization for Technical Education and Vocational Training (hereinafter referred to as "GOTEVOT") in order to evaluate the achievement of the Follow-Up Cooperation which consists of Institute Program and Upgrading Program for the Project of Technical Electronics Institute in Riyadh (hereinafter referred to as "the Institute") based on the Minutes of Meeting (hereinafter referred to as "the M/M") concerning the Institute Program signed on 23 March 1994 and the M/M concerning the Upgrading Program signed on 28 November 1994.

The Japanese Team studied and discussed together with the Saudi Arabian authority concerned regarding the achievement, impact and sustainability of the Project.

Through careful studies and discussions, both side summarized their findings and observations as described in this document.

1-2 Schedule of the Japanese Evaluation Team

Date	Schedule
05 March 1996	Arrival in Riyadh
06 March 1996	Courtesy call to JICA office Courtesy call to Embassy of Japan
07 March 1996	Meeting with Japanese experts, study information and other material
08 March 1996	Team Member meeting, study information and other material
09 March 1996	Visit Institute and College
10 March 1996	Discussion with GOTEVOT
11 March 1996	Discussion with GOTEVOT
12 March 1996	Signing of the Joint Evaluation Report and the Minutes of Meeting
13 March 1996	Reporting to JICA office and Embassy of Japan
14 March 1996	Departure from Riyadh

1-3 Evaluators

1-3-1 Japanese Side

- (1) Mr. SHIOJIRI Hiroshi/Team Leader
Senior Assistant for Technical Cooperation
Economic Cooperation Bureau,
Ministry of Foreign Affairs
- (2) Mr. IWAMOTO Muneharu/Vocational Education Cooperation Evaluation
Inspector
Elementary and Secondary Education Bureau,
Ministry of Education, Science, Sports and Culture
- (3) Mr. ISHII Yasuo/College Cooperation Evaluation
Unit Chief in Technical College, Technical Education Division
Higher Education Bureau,
Ministry of Education, Science, Sports and Culture
- (4) Mr. ARAI Yusuke/Cooperation Policy
Officer, Second Middle East Division
Ministry of Foreign Affairs
- (5) Mr. SUZUKI Kiyoshi/Industrial Electronics, Automatic Control, Audio Video Electronics
The Chief of Technical Staff for Computer Technology,
The Tokyo Metropolitan Institute for Technical Education
- (6) Mr. SATO Yoshio/Computer Technology
Senior Curriculum Specialist,
Elementary and Secondary Education Bureau,
Ministry of Education, Science, Sports and Culture
- (7) Dr. NAGAO Masayuki/Telecommunications
Associate Professor
Department of Electrical and Electronic Engineering
Faculty of Engineering
Toyohashi University of Technology
- (8) Dr. KANEKO Shunichi/Industrial Electronics, Automatic Control (Short Term Expert)
Associate Professor, Faculty of Engineering
Tokyo University of Agriculture and Technology
- (9) Mr. UCHIDA Tomochika/Project Evaluation
Director, Second Technical Cooperation Division
Social Development Cooperation Department, JICA
- (10) Mr. HOSHINO Kanji/Evaluation Survey
Chief Planner,
PADECOCO, Ltd.
- (11) Mr. OKUMA Hiroshi/Interpreting
Interpreter,
Japan International Cooperation Center

1-3-2 Saudi Arabian Side

- (1) H.E.Mr. AL-THUWAINI Abdulmohsin
Deputy Governor
General Organization for Technical Education and Vocational Training (GOTEVOT)
- (2) Dr. AL-DHOWAIYAN Abdulmohsin
General Supervisor of Technical Colleges
GOTEVOT
- (3) Dr. AL-GHAFIS Ali
Director General of Technical Education
GOTEVOT
- (4) Dr. MALLAH Saeed
Dean of the College of Technology in Riyadh
- (5) Dr. AL-TUWAIJRY Fahd
Head of Electronics Department
College of Technology in Riyadh
- (6) Dr. AL-TURKI Turki
Professor of Electronics Engineering
College of Technology in Riyadh
- (7) Mr. AL-DAHLAWI
Ex-Director of the Institute

1-4 Methodology

In order to evaluate the past performance and achievement both quantitatively and qualitatively, the following items were used;

- 1) The Minutes of Meeting (the M/M) concerning the Institute Program signed on 23 March 1994.
- 2) The Minutes of Meeting concerning the Upgrading Program signed on 28 November 1994.

2. BACKGROUND AND SUMMARY OF THE PROJECT

2-1 Brief Background of the Project

The Project for Technical Electronics Institute in Riyadh (hereinafter referred to as "the Project") was started in June 1974 as soon as the R/D was signed by the both Government of the Kingdom of Saudi Arabia and Japan. The objectives of the Project were to develop training program, textbooks, training materials and teaching manuals, and to transfer the training technique to Saudi Arabian counterparts until the opening of the Institute.

The Technical Cooperation project was actually started in 1988 due to the delay of construction of the building. The Japanese Government dispatched 50 long and short term experts and contributed equipment and materials approximately equivalent to ¥574 million (approx. US\$4.3 million in 1989) until the opening of the Institute in September 1993.

And the Saudi Arabian Government spent SR219 million (approx. US\$58.7 million) for the Project until 1993.

In January 1994, the Japanese Government dispatched a Technical Evaluation Team to the Kingdom of Saudi Arabia in order to conduct Joint Evaluation and had a series of discussions with the authorities concerned and the General Organization for Technical Education and Vocational Training (hereinafter referred to as "GOTEVOT") on implementation of technical cooperation for the Institute.

As a result of evaluation, the Japanese Evaluation Team and GOTEVOT agreed in M/M signed on 23 January 1994 the necessity of extension of the Project as the Follow-Up Cooperation which includes the Institute Program to complete the planned training program that were left incomplete because of delay of opening of the Institute. The Minutes of-Meeting concerning the Institute Program was signed on 23 March 1994 and the Follow-Up Cooperation was decided to be implemented by 30 September 1996.

After opening of the Institute, the Government of the Kingdom of Saudi Arabia requested the Japanese Government to cooperate for preparation of the upgrading of the Institute (hereinafter referred to as "Upgrading Program"). So, the Follow-Up Cooperation contained the Upgrading Program which is to prepare the upgrading of the Institute in accordance with the request by the GOTEVOT. And the Japanese Government dispatched a Preliminary Survey Team in July 1994 and an Implementation Survey Team in November, in the same year.

2-2 Chronological Review of the Project

The chronological review of the Follow-Up Cooperation is as shown in ANNEX-1.

2-3 Objectives of the Follow-Up Cooperation

2-3-1 Objectives of the Institute Program

The objective of the Program is to set up a technical institute in the Kingdom of Saudi Arabia, which admits intermediate school graduates and train them to become middle level technician in electronics technology for three years, and to achieve a broad-based technical education of electronics.

The assistance is to be given in five areas; Automatic Control, Industrial Electronics, Telecommunications, Computer Technology and Audio Video Electronics.

2-3-2 Objective of the Upgrading Program

The objective of the Program is to cooperate with the Saudi Arabian counterpart personnel in preparing for upgrading the level of the Institute due to the national requirement for highly skilled technicians and applied engineers in the field of electronics.

2-4 Schedule of Implementation

The Schedule of the Follow-Up Cooperation stimulated by the Minutes of Meetings signed on 26 January 1994 and 4 July 1994 for implementation is shown in ANNEX-2.

3. PROJECT ACHIEVEMENT

3-1 Inputs to the Follow-Up Cooperation

3-1-1 The Japanese Side

All planned inputs from the Japanese side will be completed by 30 September 1996 in compliance with the M/M. The outlay of provision of equipment by the Japanese side for the Project from the fiscal years of 1994 and 1995 are as shown in ANNEX-3.

3-1-1-1 Dispatch of Japanese Experts and Survey Teams

JICA has dispatched twelve (12) long-term experts, nine (9) short-term experts and two (2) survey teams for the Follow-Up Program during the fiscal years of 1994 and 1995 as shown in ANNEX-4.

3-1-1-2 Acceptance of Saudi Arabian Counterpart and Personnel for Training in Japan

1) Within framework of the Institute Program, training of four (4) Saudi Arabian counterparts were implemented as shown in ANNEX-5. Training of other four (4) personnel is being requested by the Saudi Arabian side.

2) For the Upgrading Program, seven (7) Saudi Arabian counterparts were trained in Japan as shown in ANNEX-5. Training for other three (3) personnel will be conducted in Japan.

3-1-1-3 Provision of Equipment

Up to now, the equipment and materials approximately equivalent to ¥100 million will be provided by the Japanese government for Upgrading Program through JICA. Detailed list of the equipment and materials to provide is shown in ANNEX-6.

3-1-2 The Saudi Arabian Side

The Saudi Arabian side provided the necessary inputs in compliance with the M/M of the Follow-Up Cooperation.

The Saudi Arabian side provided the counterparts for the Follow-Up Cooperation, for both Institute and Upgrading Program, and various equipment and materials.

The total outlay of the Project by Saudi Arabian side during the fiscal years of 1994, 1995 and 1996 is SR93 million (approx. US\$24.9 million).

3-1-2-1 Assignment of Saudi Arabian Counterparts and Administrative Personnel

- A) The Saudi Arabian side assigned eighteen (18) counterparts until 1994, fifty one (51) in 1995 and at present thirty two (32) for the Institute Program.
- B) For the Upgrading Program, the Saudi Arabian side assigned two (2) counterparts in 1994 and five (5) in 1995 in total seven (7) counterparts as shown in ANNEX-5.

3-1-2-2 Purchase of Equipment and Materials

The Saudi Arabian side provided various equipment for the Project which is approximately SR93 million (approx. US\$24.9 million) as shown in ANNEX-3.

3-2 Activities of the Follow-Up Cooperation

All planned activities for the Follow-Up Cooperation will be completed by 30 September 1996 as follows.

3-2-1 Development of Training Curricula and Syllabi

- A) For the Institute Program, the training curricula and syllabi for each training course, Industrial Electronics, Telecommunications and Computer Technology were/will be developed and revised by the end of the Follow-Up Cooperation period. Training components of Automatic Control and Audio Video courses are disseminated into IE and TC courses. This arrangement of the courses is based on the consideration that Automatic Control is included in Industrial Electronics and Audio Video is included in Telecommunications.
- B) For the Upgrading Program, the training curricula and syllabi for three departments of IE/AC, CT and TC will be developed and revised by the end of the Follow-Up Cooperation period.

3-2-2 Development of Textbooks and Training Materials

- A) For the Institute Program, development of the textbooks for the third year training will be completed by Saudi Arabian counterparts by September 1996. Necessary training materials and instruction manuals were developed by September 1996 as well.
- B) For the Upgrading Program, development of the textbooks and necessary training materials and instruction manuals for the three departments of IE/AC, CT and TC will be completed by Saudi Arabian counterparts by September 1996.

3-2-3 Training of Saudi Arabian Counterpart Personnel in Japan

As mentioned above 3-1-1-2.

3-2-4 Guidance and Advice for Saudi Arabian Counterpart Personnel

- A) For the Institute Program, training of the counterpart personnel has been performed throughout the Program period such as training at the Institute and in Japan.
- B) For the Upgrading Program, training of the counterpart personnel has been performed throughout the Program period at the Technical Colleges in Japan. Japanese short term experts visited/will visit Saudi Arabia to provide guidance and advice for Saudi Arabian counterpart personnel.

3-2-5 Reinforcement of the Institute and the College

- A) With the supply of necessary equipment by the both sides and training by the Japanese experts, the Institute is sufficiently capable for conducting planned training program. Development of curricula were effectively implemented as well.
- B) Useful equipment in the Institute will be used for the Upgrading Program.

3-2-6 Implementation of Training Courses in the Institute

Training courses were started in September 1993 and the Institute accepted 240 first year students. In September 1994, 257 students were enrolled but no student was accepted in September 1995, because the Institute will be transformed to the College by the Upgrading Program according to resolution No.38 (19 January 1992).

For the third year training, GOTEVOT decided to provide the following three courses;

- 1) Industrial Electronics (IE course)
- 2) Telecommunications (TC course)
- 3) Computer Technology (CT course)

The workshop of TC is held regularly by the Japanese expert for Saudi Arabian counterparts. The Technical Seminar is scheduled to be held in April 1996.

3-2-7 Monitoring and Evaluation

The joint meetings were periodically held by both sides to monitor the progress and training effects of the Institute Program. The Japanese Team was dispatched in January 1994 to conduct joint project evaluation with the Saudi Arabian Authorities concerned.

3-3 Outputs from the Follow-Up Cooperation

- A) For the Institute Program, as it was mentioned above, all the training activities and outputs for the achievement of the objectives of the Institute Program will be completed by 30 September 1996.

In accordance with the Institute Program, four (4) counterparts were trained until March 1996. Further request has been made by the Saudi Arabian side to send four (4) personnel to be trained in Japan by 30 September 1996.

The Japanese expert team will accomplish planned task of the Technical Cooperation Program by the end of the Follow-Up Cooperation period, 30 September 1996.

In general, it is considered that the achievement level of the counterparts will depend on the length of training at the Institute. It is expected for the counterparts to conduct the training courses by themselves in order to obtain the sufficient skills and knowledge.

- B) For the Upgrading Program, ten (10) counterparts were/will be trained by September 1996.

3-4 Purpose of the Follow-Up Cooperation

During the Follow-Up Cooperation the following activities were/will be carried out.

Training of the counterparts to gain sufficient knowledge and experience to carry out the courses using the sufficient building facilities, equipment and installations, textbooks, teaching materials.

Therefore, the trained counterpart personnel should remain at the Institute in order to carry on the effective training activities.

The facilities, other materials and a lot of experiences of the trained counterpart personnel were/will be fully utilized for the upgrading.

3-5 Overall Goal

(1) The Institute Program

It is to provide work force of skilled technicians in the field of the above mentioned three electronics fields by the salient features of technical education system in electronics technology. Frequent modernization and improvement of the training courses and installation should be undertaken by GOTEVOT.

(2) The Upgrading Program

It is expected to provide higher skilled technicians and applied engineers to field of electronics in accordance with the requirements in Saudi Arabia.

4. IMPACTS OF THE FOLLOW-UP COOPERATION

4-1 The Institute Program

The Saudi Arabian Authorities explained to the Japanese Team that the following points would be properly implemented.

- 1) The Program is expected to upgrade the technical standard of technicians in Saudi Arabia. The Institute Program is appreciated as the model technical cooperation which established the salient features of technical education system in electronics technology in Saudi Arabia.
- 2) Training curriculum and method of the Institute are applied for the technical high

schools in the country as a model training program of GOTEVOT.

- 3) The counterparts of the Institute are familiar in the operation of the equipment and they will be possibly recruited by the College.
- 4) Many sorts of equipment and teaching manuals developed in the Institute will be transferred for the College education.
- 5) The counterparts of the Institute Program are expected to popularize the Japanese education system for electronics training.
- 6) Developed textbooks and teaching materials will be used in the technical high schools as a standard textbooks and teaching materials in the country.
- 7) Provided equipment which is not utilized in the College will be used in the technical high schools.
- 8) Teaching manuals will be utilized in the technical high schools for practical training.

4-2 The Upgrading Program

- 1) The Upgrading Program is expected to prepare the work force of higher skilled technicians in and applied engineers in the field of electronics in Saudi Arabia.

5. THE PROSPECT OF SUSTAINABILITY

5-1 The prospect of Sustainability from the Organization Aspect

- 1) The Institute is established and positioned in GOTEVOT which will be expected to provide sufficient human resources and is capable of sustaining the future programs, since the Institute is based on the Governmental work force policy in which the priority is given for the education of middle level technicians.
- 2) It is considered that the Institute could accumulate the required number of capable staff for management and implementation of the training programs.

5-2 The Prospect of Sustainability from the Financial Aspect

- 1) The Institute is an entity in the organization structure of GOTEVOT, so that the financial support to the Institute will be continued. The Institute will be sustained even after the end of cooperation period.
- 2) National financial background is sufficiently capable of maintaining the Institute.
- 3) Budget for the Institute has been sufficiently allocated during the past three fiscal years, 1993, 1994 and 1995.

5-3 The Prospect of Sustainability from Human Resources and Technical Aspect

- 1) Current counterpart training program of the Institute is considered to be sufficient for acquisition of the required knowledge and know-how to conduct training program of the Institute and other technical high schools in Saudi Arabia.
- 2) If the Institute succeeds in conservation of the trained counterparts and instructors, training standard of the Institute will be maintained.

5-4 Other Recommendations for Administration

5-4-1 The Institute Program

- 1) It is important for the Institute to cooperate and liaise with local electric, electronics, and telecommunications industries to constantly meet the local needs.
- 2) In order to conduct the training program smoothly effectively, it is essential to attract students with better quality as much as possible.

5-4-2 The Upgrading Program

- 1) It is essential to keep the trained counterparts to conserve the sufficient training level.
- 2) It is important for the College to cooperate and liaise with local electric, electronics, and telecommunications industries to constantly meet the local employment needs.

6. SUMMARY OF EVALUATION

6-1 The Institute Program

6-1-1 Technical Transfer

In general, the technical transfer program is successfully performed and all the subjects agreed upon the M/M have been implemented.

6-1-2 Training of Saudi Arabian Counterparts in Japan

The training of the Saudi Arabian counterpart personnel in Japan covered all the subjects stipulated in the Minutes of Meeting (M/M). In general, the counterparts expressed their satisfaction of the training program prepared by JICA.

The training in Japan was especially appreciated in the following view points;

- (1) Technical transfer in the field of electronics
- (2) Utilization of the latest equipment and teaching technique

- (3) Familiarization with Japanese education, training and licensing systems
- (4) Familiarization with Japanese electronics technology background

6-1-3 Storage, Maintenance and Operation of Equipment

Generally, the equipment and materials provided by JICA to the Institute have been practically utilized and favorably maintained.

6-2 The Upgrading Program

Up to now, the Upgrading program is being undertaken as scheduled.

6-2-1 Technical Transfer

In general, the technical transfer program is being implemented as scheduled.

6-2-2 Training of Saudi Arabian Counterparts in Japan

The training of the Saudi Arabian counterpart personnel in Japan covered all the subjects stipulated in the Minutes of Meeting (M/M). In general, the counterparts expressed their satisfaction of the training program prepared by JICA.

The training in Japan was especially appreciated in the following view points;

- (1) Technical transfer in the field of electronics
- (2) Utilization of the latest equipment and teaching technique
- (3) Familiarization with Japanese education, training and licensing systems
- (4) Familiarization with Japanese electronics technology background

6-2-3 Storage, Maintenance and Operation of Equipment

Most part of the equipment and materials provided by JICA to the Institute will be practically utilized in the College.

7. CONCLUSIONS

7-1 The Institute Program

As a result of the Joint Evaluation by the Saudi Arabian Authorities concerned and the Japanese Evaluation Team, both sides reached the following conclusions;

- 1) In general, the activities stipulated in the R/D and M/M are successfully implemented.
- 2) Efforts of the Saudi Arabian and Japanese authorities concerned, Japanese experts and counterpart personnel are leading the Project purposes to successful completion of the cooperation project.

CHRONOLOGICAL REVIEW OF THE FOLLOW-UP COOPERATION

Year	Month	Item
The Institute Program		
1994	January	JICA dispatched Technical Evaluation Team to Saudi Arabia and conducted to Joint Evaluation with GOTEVOT Team. The both team recognized the necessity of extension of the Project as follow-up cooperation.
	March	JICA dispatched Technical Survey Team and the Minutes of Meeting concerning extension of the project, Follow-Up Cooperation, was signed.
	April	Six (6) long-term experts started training subjects.
	May	Provision of textbooks of the third year training course.
1995	March	One (1) counterpart was dispatched to Japan for Training.
	April	Six (6) long-term experts were dispatched.
	April	One (1) counterpart was dispatched to Japan for Training.
	July	One (1) counterpart was dispatched to Japan for Training.
	October	One (1) counterpart was dispatched to Japan for Training.
	December	Training instruction manuals and training materials for the third year training were developed.
1996	March	JICA dispatched Technical Evaluation Team to Saudi Arabia and conducted to Joint Evaluation with GOTEVOT Team.
The Upgrading Program		
1994	July	JICA dispatched Preliminary Survey Team to Saudi Arabia and the Minutes of Meeting concerning the Project for the Upgrading of Technical Electronics Institute in Riyadh was signed.
	November	JICA dispatched Implementation Team to Saudi Arabia and the Minutes of Meeting concerning Technical Cooperation Program for Upgrading the Technical Electronics Institute in Riyadh was signed.
	November	Two (2) counterparts were dispatched to Japan for training.
1995	March	One (1) long term expert was dispatched to Saudi Arabia.
	May	One (1) long term expert was dispatched to Saudi Arabia.
	June	Four (4) short term experts were dispatched to Saudi Arabia.
	September	Five (5) counterparts were dispatched to Japan for training.
	December	One (1) short term expert was dispatched to Saudi Arabia.
1996	January	Selected provisional equipment were ordered to Japan.
	March	JICA dispatched Technical Evaluation Team to Saudi Arabia and conducted to Joint Evaluation with GOTEVOT Team.
	March	One (1) short term expert was dispatched to Saudi Arabia.
	April*	One (1) short term expert was dispatched to Saudi Arabia.
	May*	Three (3) counterparts were dispatched to Japan for Training.

* : Tentative

SCHEDULE OF IMPLEMENTATION/THE INSTITUTE PROGRAM

ITEM	Year Month	1994			1995			1996*	
		4	10	3	4	10	3	4	9 10
Term of Follow up Cooperation									
JAPANESE SIDE									
1. Development of Training Materials									
(1) Training Textbook for 3rd Year		•Provided							
(2) Practice Manual for 3rd Year			-----						
(3) Training Equipment for 3rd Year					-----				
2. Dispatch of Japanese Experts (Long Term)									
(1) Chief Advisor									
(2) Senior Advisor									
(3) Automatic Control									
(4) Audio Video					-----				
(5) Computer Technology									
(6) Industrial Electronics									
(7) Telecommunication									
(8) Basic Electronics and Electricity									
(9) Mechatronics									
(10) General Affairs									
3. Dispatch of Japanese Experts (Short Term)									
(1) Mathematics		---							
(2) Automatic Control		---							
(3) Industrial Electronics									
(4) ditto									
4. Training of Counterpart Personnel in Japan									
(1) Operation and Management									
(2) Basic Machinery									
(3) Basic Electricity									
(4) Computer Technology									
(5) Electricity and Electronics									
(6) Industrial Electronics									
(7) Telecommunication									
SAUDI ARABIAN SIDE									
Provision of Counterpart and Staff									
Budget for Implementation of the Project									

*: Tentative

SCHEDULE OF IMPLEMENTATION/THE UPGRADING PROGRAM

ITEM	Year	1994			1995			1996*	
	Month	4	10	3	4	10	3	4	9 10
Term of Upgrade Program									
JAPANESE SIDE									
1. Development of Training Syllabi									
2. Activities of the Japanese Experts									
(1) Development of Curriculum					---				
(2) Development of Training Material					---	---		---	
(3) Long Term Japanese Expert -Electronics Technology									
(4) Short Term Japanese Experts -Industrial Electronics -Automatic Control -Communication Technology -Computer Technology					---	---		---	
3. Training Equipment									
(1) Advise for selection of equipment to provide									
(2) Provision of equipment									
4. Training of Saudi Arabian Personnel									
(1) Operation and Management					---				
(2) Computer Technology						---	---		
(3) Industrial Electronics and Control						---			
(4) Communication						---	---	---	
SAUDI ARABIAN SIDE									
Appointment of Full-time Counterpart									
Purchase of equipment and materials									

*: Tentative

EXPENSES FOR PROVISION OF EQUIPMENT

BY THE JAPANESE SIDE

Japanese Fiscal Year	1994	1995	1996
The Institute Program	0	0	0
The Upgrading Program	0	0	¥100,000,000 approximately US\$9,524,000 (planned)

*US\$1=¥105 (March 1996)

BY THE SAUDI ARABIAN SIDE

	1994	1995	1996
The Institute Program	SR62,000,000 approximately US\$16,600,000	SR25,000,000 approximately US\$6,700,000	0
The Upgrading Program	0	0	SR6,000,000 approximately US\$1,610,000

*US\$1=SR.3.73 (March 1996)

JAPANESE EXPERTS DISPATCHED BY JICA

(1) The Institute Program

<u>[Name]</u>	<u>[Assignment]</u>
<u>(Long-term Experts)</u>	
<u>Chief Advisor</u>	
Mr. Masahiro OSHIMA	April 1988 to April 1995
Dr. Isao OKANE	May 1995 to September 1996
<u>Senior Advisor</u>	
Mr. Kano SHIOTANI	April 1993 to March 1995
Mr. Masahiro OSHIMA	May 1995 to September 1996
<u>Automatic Control</u>	
Mr. Noboru OGINO	April 1993 to March 1994
Mr. Itsuo SHIMIZU	January 1995 to September 1996
<u>Audio Video</u>	
Mr. Kazumasa OGITA	July 1994 to June 1995
<u>Computer Technology</u>	
Mr. Keitaro HORI	May 1994 to September 1996
<u>Industrial Electronics</u>	
Mr. Takashi TSUCHIYA	April 1992 to March 1995
Mr. Hatsuichi YAMAGUCHI	April 1995 to September 1996
<u>Telecommunication</u>	
Mr. Mitsuo IDE	April 1992 to March 1994
Mr. Kiyoshi FUJITA	April 1995 to September 1996
<u>Basic Electronics and Electricity</u>	
Mr. Mitsuo IDE	April 1994 to March 1995
Mr. Shigenori YAMADA	April 1995 to September 1996
<u>Mechatronics</u>	
Mr. Mikio MURATA	July 1994 to September 1996
<u>Administration</u>	
Mr. Shigeki ISHIGAKI	November 1989 to September 1996
<u>(Short-term Experts)</u>	
<u>Mathematics</u>	
Mr. Kosaku SATO	April 1994
<u>Automatic Control</u>	
Mr. Toshiro MIYAMOTO	June 1994 to July 1994
<u>Industrial Electronics</u>	
Mr. Takashi TSUCHIYA	December 1995
Mr. Ichiro FUNAKURA	December 1995
<u>Computer Technology</u>	
Mr. Yoshiyuki ASARI	March 1996 to April 1996
Mr. Koji NANBA	April 1996 to September 1996

JAPANESE EXPERTS DISPATCHED BY JICA

(2) The Upgrading Program

<u>[Name]</u>	<u>[Assignment]</u>
(Long-term Expert)	
<u>Electronics Technology</u>	
Mr. Goro KUMON	April 1995 to September 1996
(Short-term Experts)	
<u>Industrial Electronics</u>	
Dr. Masayuki NAGAO	June 1995
<u>Automatic Control</u>	
Dr. Shunichi KANEKO	June 1995
<u>Communication</u>	
Dr. Koichi SAKANIWA	June 1995
Dr. Junichi TAKADA	December 1995
Dr. Isao YAMADA	April 1996
<u>Computer Technology</u>	
Dr. Toru OKUYAMA	June 1995, March 1996

LIST OF SAUDI ARABIAN COUNTERPARTS

(1) The Institute Program

<u>[Position]</u>	<u>[Assignment]</u>	<u>[Training in Japan]</u>
<u>Administration</u>		
Mr. Abdullah AL-HUMOOD Director	Feb 1993	Aug 1995
<u>Computer Technology</u>		
Mr. Mohammad AL-HAGBANI	Sep 1992	Oct 1995-Mar 1996
<u>Mechanical</u>		
Mr. Khalid AL-HUSSAINI	Sep 1993	Mar 1995-Sep 1995
<u>Electricity</u>		
Mr. Hatim AL-ZAINI	Sep 1993	Apr 1995-Sep 1995

LIST OF SAUDI ARABIAN COUNTERPARTS

(2) The Upgrading Program

<u>[Position]</u>	<u>[Assignment]</u>	<u>[Training in Japan]</u>
<u>Administration</u>		
Dr. Fahd AL-TUWAIJRY	Nov 1994	Dec 1994
Dr. Turki AL-TURKI	Nov 1994	Dec 1994
<u>Computer Technology</u>		
Dr. Khalid AL-RAJEH	Nov 1994	Sep 1995-Oct 1995
Dr. Abdulaziz AL-TAMMAMI	Nov 1994	Sep 1995-Oct 1995
Mr. Saad AL-OLAIWAY	Nov 1994	Sep 1995-Oct 1995
<u>Industrial Electronics and Control</u>		
Mr. Yousef AL-MAHAYYA	Nov 1994	Sep 1995-Oct 1995
<u>Communication</u>		
Mr. Salem DAMMAS	Nov 1994	Sep 1995-Oct 1995

*Three (3) counterparts will be sent to Japan for training in 1996.

LIST OF EQUIPMENT SUPPLIED BY JICA

Price=x1000

Provided	Number	Items (Manufacturer)	Specification	Quantity	Utilized	Price(SR)
1994	-	-	-	-	-	-
1996* Tentative	1	Introductory Direct Digital Control Training System (Armfield)	PCT-9 PCT10SC-8 PCT10-10 PCT10-11 PCT-11 PCT-13 PCT-14 PCT14COM PCT-15 PCT-16	5 set		1,056
	2	Introductory Analog Control Training System (Feedback)	MS150 33-01 01-10	5 set		211
	3	Introductory Transducers and Instrumentation on Training System (Feedback)	TK2942 01-100	5 set		102
	4	Electronics Experiments System (LJ Tech. System)	DIGIAC3000-3.1 DIGIAC3000-3.2	15 set		169
	5	Power Electronics Trainer & Kit (Feedback)	PE481 PE484	8 set		339
	6	Diagnostic Test System (FLUKE)	9100F	1 set		164
	7	PCs Unit (Compaq)	M630 QVision2000	25 set		325
	8	Printer for PCs Unit (HP)	LaserJet	15 set		45
	9	Micro Processor Development System (HP)	HP64700B HP64704A	1 set		340
	10	Modulation Board HPS	4280-1 4280-20 V0130	5 set		42
	11	Digital Modulation Training System (HPS)	4250 4155F 4100	5 set		164
	12	Microstrip Trainer (Feedback)	MST532	5 set		378
	13	Telephony Systems Tutor (Feedback)	53-100 58-100 58-110	5 set		97
	14	Analog Modulation Training System (HPS)	4270 DCS297	5 set		314
	15	Digital Signal Processing Lab. (Texas Instruments)	TMDS3242850-2 +7 items	1 set		53
	16	Copy Machine (RICOH)	FT6655 Sorter	1 set		55

Note: Quantity and items would be adjusted within amount of budget mentioned in 3-1-1-3.

LIST OF TEXTBOOKS AND TEACHING MANUALS**1. Textbooks**

- (1) Electronic Technology 1A
- (2) Electronic Technology 1B
- (3) Electricity Fundamentals
- (4) Information Technology Fundamentals
- (5) Electronics Drawing
- (6) Instrumentation and Control
- (7) Electrical Engineering 1A
- (8) Electronic Technology 2A
- (9) Electronic Technology 2B
- (10) General Teaching Guideline for the Workshops and Laboratories
in Electronics Institute in Riyadh
- (11) Project Study
- (12) Electronic Technology 3
- (13) Audio Video
- (14) Industrial Electronics
- (15) Automatic Control
- (16) Telecommunications
- (17) Computer Technology
- (18) Electronic Drawing (CAD)

2. Teaching Manuals

- | | | |
|----------------------------|-------------------------------|--------|
| (1) Industrial Electronics | :Microprocessor | (IE-5) |
| (2) ditto | :Power Electronics | (IE-6) |
| (3) ditto | :Measurement and Control | (IE-7) |
| (4) Telecommunications | :Wire Telephone Communication | (TC-5) |
| (5) ditto | :Microwave | (TC-6) |
| (6) ditto | :Data/Digital Communication | (TC-7) |
| (7) Computer Technology | :Hardware | (CT-5) |
| (8) ditto | :Peripherals | (CT-6) |
| (9) ditto | :Software | (CT-7) |

بسم الله الرحمن الرحيم



المملكة العربية السعودية
المؤسسة العامة للتعليم الفني والتدريب المهني
الادارة العامة للتعليم الفني

الرقم :
التاريخ :
المشروعات :

out lines of the future cooperation after Sept. 1996

(1) College level:

(A) The following items should be include for the future cooperation program :

- Evaluation process for curricula and syllabus which will be carried out from September 1996 (three subjects IEC, CT, COM
- Implement and update of teaching materials (Textbook, Practical Lab. and Workshop manuals).
- Improvement the academic supervision for the department.
- Suitable educational equipment and etc.
- The minimum period for the future cooperation is 2 years.

التعليم الفني



المملكة العربية السعودية
الهيئة العامة للتعليم الفني والتدريب المهني
الإدارة العامة للتعليم الفني

الرقم :

التاريخ :

المشروعات :

(B) Dispatched experts:

B-1 Long term:

- Leader : Management for JICA team and give an academic advice to curricula and syllabus in IEC, CT, and COM. field.

with these conditions:

- Experience in Electronics field.
- Not less than Associate Professor.
- Speak and Write good English.

- Coordinator : coordination in the JICA team.

with these conditions:

- Experience in Electronics field.
- Speak and Write good English.

-Three practical advisory experts :

- Advise to Lab. and workshop subjects and teachers.
- Selection of suitable equipment.

with these conditions:

- Long experience in IEC, CT & COM fields in National Technical Colleges.
- Not less than B.Sc. holder.
- Speak and Write good English.



المملكة العربية السعودية
المؤسسة العامة للتعليم الفني والتدريب المهني
الادارة العامة للتعليم الفني

الرقم :
التاريخ :
المشروعات :

B-2 Short term:

-Three advisory experts :

- Dispatching period : More than 2 weeks per visit.
- Academic advice to curricula and syllabus in IEC, CT, and COM. field
- Advise to Lab. and workshop subjects and teachers.
- Selection of suitable equipment.

with these conditions:

- Long experience in IEC, CT & COM fields in National Technical Colleges.
- Not less than Associate Professor.
- Speak and Write good English.

(C) Evaluation team from High Education Ministry of Japan to evaluate the total department status and level compared with college of technology in Japan.

(D) Exchange of opinion for the new technology by:

- Dispatching Japanese experts to holding short courses and training programmes in new technology for the department staff.
- Grant academic scholarships for Ph.D. Saudi Staff to attend advanced academic program or to participate in research activities related to the area to strength the academic relation between Saudi and Japanese scientists.
The period of the scholarship varies between three months to one year.



المملكة العربية السعودية
المؤسسة العامة للتعليم الفني والتدريب المهني
الإدارة العامة للتعليم الفني

الرقم:

التاريخ:

المشروعات:

(E) Dispatching of Saudi counterparts to University or Technical college in Japan: (in purpose)

- To observe the actual condition for lecture and research lab.
- To get some efficiency ideas and knowledge for using technical equipment
- To evaluate the lecture, practice and workshop.
- To advice on curricula.
- To processed of practical experiments.
- To get knowledge in new technology.
- To make advice on academic supervision.

(F) Contributed equipment:

Some equipment would be contributed by the Government of Japan to the three subjects (IEC, CT, & COM) department in the College of Technology in Riyadh during this future cooperation period.

(G) Extended cooperation:

- Future plane for new subjects in diploma level.



المملكة العربية السعودية
المؤسسة العامة للتعليم الفني والتدريب المهني
الادارة العامة للتعليم الفني

الرقم :
التاريخ :
المشروعات :

- Future plane for B.Sc. level in three subjects (IEC, CT,& COM).
- Dispatching excellent students in the department to cooperation training programe in the Japanese factories.
- Scientific research including journals, magazines, and books published in both countries should be interchanged. The material should be written in English language.
- Providing the technical colleges by the new information through the scientific materials published in Japan. Also, inviting the saudi staff to the scientific international exhibition will held in following the progress of technology in Japan.

(2) Secondary level:

On completion of the present Japanese technical cooperation on the secondary level by September 30, 1996, the Saudi Side will make use of the courses curricula prepared by the Japanese Experts. This assumption will be achieved by distributing those curricula all over the Electronics Technology Departments in the Secondary Industrial Institutes in the Kingdom. Each department has to adopt a part of those curricula.

Therefore, the Saudi Side desires that the Japanese cooperation on the secondary level as presently existing in the Technical Electronics Institute can be continued for a longer period. In such a case the Japanese Experts will be distributed all over the Institutes according to the part of curricula adopted by the same institute.

6 終了時評価調査票

プロジェクト方式技術協力 終了時評価調査票

作成日：平成 年 月 日

担当：社会開発協力第2課

氏名：

案件名	(和) サウディアラビア・リアド電子技術学院 フォローアップ協力終了時合同評価調査 (英) Joint Evaluation for the Follow-Up Cooperation for the Technical Electronics Institute in Riyadh Project		
供与国	サウディアラビア国		
協力期間 (R/D協定上)	1974年6月12日 ~ 1996年9月30日 (22年3ヵ月)		
事業分野	産業開発		
技術協力分野	人材育成		
相手国実施機関	サウディアラビア教育省		
エバリュエーション調査団	担当	氏名	所属
	団長	塩尻 宏	外務省技術協力課企画官
	職業教育協力評価	岩本宗治	文部省初等中等教育局 視学官
	短大教育協力評価	石井康雄	文部省高等教育局 専門教育課主任
	協力政策	新居雄介	外務省中近東アフリカ局 中近東第2課事務官
	工業電子、自動制御、オーディオ、ビデオ	鈴木 清	都立工業技術教育センター 情報技術科
	工業電子、自動制御、「短専派遣」	金子俊一	東京農工大学工学部 助教授
	コンピュータ技術	佐藤義雄	文部省初等中等教育局 職業教育課教科調査官
	通信	長尾雅行	豊橋技術科学大学工学部 助教授
	計画評価	内田智允	国際協力事業団 社会開発協力第2課長
	評価調査整理 通訳	星野莞治 大熊 浩	株式会社パデコ (財)日本国際協力センター 研修監理員

評価結果総括	
(1) 目標達成度	
(2) 案件の効果	
(3) 自立発展性の見通し	
(4) フォローアップの必要性	

I. 協力実施プロセス

<p>1. 要請の内容と背景</p>	<p>本プロジェクトは、1974年以來、学園の開校までの間の教育基盤整備を目的として実施した協力であるが、サウジ側は学院開校後も引き続き学校運営に係る協力を要望してきた。そのため1994年（平成6年）1月に評価調査団を派遣したところ、学院に対する技術移転が未だ十分なレベルに達していないとの判断から、同年3月に実施協議調査団を派遣し、1996年9月までのフォローアップ協力を行う事を内容とするR/Dに署名をした。</p>
<p>2. 協力実施プロセス</p> <p>(1) 要請発出</p> <p>(2) 学院評価調査団 (担当：上枝弘幸 JICA 社協2課)</p> <p>(3) 実施協議調査 (担当：上枝利幸 JICA 社協2課)</p> <p>(4) 事前調査 (担当：上枝弘幸 JICA 社協2課)</p>	<p>1994年1月26日（フォローアップ協力）</p> <p>1994年1月20日 ～ 1994年1月29日（10日間）</p> <p>団長 鈴木重之 外務省経済協力局 技術協力課企画官</p> <p>職業教育行政 岩本宗治 文部省初等中等教育局 職業教育課教科調査官</p> <p>高等教育行政 尾藤広幸 文部省高等教育局 専門教育課係長</p> <p>自動制御/工業電子 青木輝尋 東工大附属工業高校教諭</p> <p>計画評価 蔵本文吉 国際協力事業団 社会開発協力第2課長</p> <p>通訳 石川義次 (財)日本国際協力センター 研修監理員</p> <p>1994年3月19日 ～ 1994年3月26日（8日間）</p> <p>団長 岩本宗治 文部省初等中等教育局 職業教育課教科調査官</p> <p>協力計画 新山雄次 文部省初等中等教育局 職業教育課指導係長</p> <p>協力企画 上枝弘幸 国際協力事業団 社会開発協力第2課</p> <p>通訳 石川義次 (財)日本国際協力センター 研修監理員</p> <p>1994年6月24日 ～ 1994年7月6日（13日間）</p> <p>団長 鈴木重之 外務省経済協力局 技術協力課企画官</p> <p>協力計画 尾藤広幸 文部省高等教育局 専門教育課係長</p> <p>工業電子 長田 正 九州大学工学部 情報工学科教授</p> <p>自動制御 羽根田博正 神戸大学工学部 電気電子工学科教授</p> <p>コンピュータ技術 樋口龍雄 東北大学工学部 情報工学科教授</p>

(5) 実施協議調査 (担当：上枝利幸 JICA 社協 2 課)	電気通信	池田博昌	大阪大学工学部 通信工学科教授
	協力企画	上枝弘幸	国際協力事業団 社会開発協力第 2 課
	通訳	石川義次	(財)日本国際協力センター 研修監理員
	1995 年 11 月 24 日～1995 年 12 月 03 日(10 日間)		
	団長	牧野 修	国際協力事業団 国際協力専門員
	工業電子	長尾雅行	豊橋技術科学大学工学部 電気電子工学系助教授
	コンピュータ技術	河合和久	豊橋技術科学大学工学部 知識情報工学系助教授
	通信	伊東利哉	東京工業大学大学院 総合理工学研究科助教授
	技術協力	杉山 長	外務省経済協力局 技術協力課課長補佐
	協力企画	上枝弘幸	国際協力事業団 社会開発協力第 2 課
通訳	石川義次	(財)日本国際協力センター 研修監理員	

7 各種実績表

リアド電子技術学院プログラム活動結果一覧

処理事項	担当	96年2月 達成度	96年9月 達成度	摘要	
I. サ側購入機器					
機器設置	IE	山口	100	※達成度・見込みは%で示す。 機器動作試験済。実習指導書準備中 無線局免許未発給。実習指導書準備中 機器動作試験中 機器動作試験中 機器動作試験済。実習指導書準備中	
	IE	清水	100		
	TC	藤田	90		
	TC	山田	95		
	CT	堀	70		
	CT	村田	70		
	CAD	山田	90		
II. 実習指導書及び技術移転					
A (実習)					
3年	IE-5 (マイクロプロセッサ)	山口	80	100	
	IE-6 (パワエレロックス)	山口	80	100	
	IE-7 (計測・制御)	清水	80	100	
	IE 課題研究	山口	70	100	
	IE 課題研究	清水	70	100	
	TC-5 (有線電話通信)	藤田	80	100	
	TC-6 (無線マイクロ波)	山田	80	100	
	TC-7 (データデジタル通信)	藤田	80	100	
	TC 課題研究	藤田	70	100	
	TC 課題研究	山田	70	100	
	CT-5 (ハードウェア)	堀	80	100	
	CT-6 (周辺装置)	村田	80	100	
	CT-7 (ソフトウェア)	堀	80	100	
	CT 課題研究	堀	70	100	
	FS-2-3 (CAD)	山田	80	100	
	AV-5 (オーディオ実習)	前専門家	80	AV, AC科に機器設置が行われなかったため、具体的に実習指導書としてはまとめられなかった。AV科前専門家は平成7年6月任期終了時にアウトライン程度にまとめたものを完成させている。AC科はIE科に統合される前までの分をまとめている。必要のあるところを、第2セミスター終了後に補充をした。	
	AV-6 (ビデオ実習)	(荻田)	80		
	AV-7 (CCTV/スタジオ)		100		
	AC-5 (デジタル制御)	清水	90		100
	AC-6 (空圧・油圧制御)	村田	90		100
	AC-7 (自動制御)	清水	90		100
	AC 課題研究	村田	90		100
	AC 課題研究	清水	90		100
2年	FS-1-2 (コンピュータ(エンス))	堀	90		100
	FS-4 (電気基礎)	山田	100		
	FS-5 (電子工作)	藤田	100		
	FS-8 (アナログ回路)	山田	100		
	FS-9 (デジタル回路)	村田	100		

処 理 事 項	担 当	96年2月	96年9月	摘 要	
		達成度	達成度		
Ⅱ (講義) 教材補充					
IE	山口	80	100		
IE	清水	80	100		
TC	藤田	80	100		
TC	山田	80	100		
CT	堀	80	100		
CT	村田	80	100		
Ⅲ. 教科書・参考書 内容補充					
IE	山口	80	100		
IE	清水	80	100		
TC	藤田	80	100		
TC	山田	80	100		
CT	堀	80	100		
CT	村田	80	100		
Ⅳ. その他					
1. 教育評価 (カリキュラム改善) 資料提示	全員	80	100		
2. 研修員派遣	山田	100		学校経営及び電子工学、メカトロ技術の3名 は今年度9月までに修了、コンピュータ技術 関係は3月末修了。 1名：12月に実施済 1名：12月に実施済 2名：3月中旬から9月末まで	
	堀	80	100		
3. 短期専門家受入れ	山口	100			
	清水	100			
	堀	80	100		
	村田		100		
4. 技術教育セミナー 企画、実施	村田	80	100		4月10日実施予定
	清水	80	100		4月10日実施予定
	石垣	80	100		4月10日実施予定
	全員	80	100		4月10日実施予定
5. 調査団滞在レポート 及び資料提示	全員	80	100	3月5日～14日来サ予定	
6. 教材開発・メンテナンスシステム のレポート	清水	80	100		
	各科				
7. 工場視察	清水	100		1月実施済	
	村田	100		〃	
	堀	100		〃	
	山口	70	100	8月実施予定	
	藤田	70	100	〃	
	山田	70	100	〃	

2. 生徒数と履修科目単位数(工学)

(1) 生徒数

合計生徒数	第1学年	第2学年	第3学年
開校1年目(1993年9月) = 240名	240名	-	-
開校2年目(1994年9月) = 355名	257名	98名	-
開校3年目(1995年9月) = 226名	-	138名	88名

* 1年次、2年次は全員共通の工学基礎科目を学び、3年次に専門科目にクラス分けされる。

* 3年次専門科目: ①コンピュータ技術科 30名
 ②工業電子科 28名
 ③電気設備科 28名

計 88名

(2) 単位数

【一般科目】	第1学年	第2学年	第3学年	合計
数学	4	4	4	12
物理	2	2	-	4
化学	1	1	-	2
プログラミング	1	1	-	2
英語	4	3	3	10
体育	1	1	1	3
音楽	1	1	-	2
合計	14	13	8	35

【専門科目】	第1学年	第2学年	第3学年	合計
基礎科目英語	10	11	6	27
専門科目英語	-	-	8	8
取組	2	2	2	6
基礎科目実習	14	14	3	31
専門科目実習	-	-	9	9
課題研究	-	-	4	4
-	-	-	-	-
合計	26	27	32	120

* 第1学年単位数合計 = 40

* 第2学年単位数合計 = 40

* 第3学年単位数合計 = 40

* 3年間の単位数合計 = 120

1- (2) カウンターパート育成状況一覧 (C/P日本研修にて来日した者)

氏名	生年月日	出身年月	学歴	能力						備考
				日本語	日本語(通)	日本語(種)	日本語(種)	日本語(種)	日本語(種)	
Abdulloh AL-REHED	55.1.07	93.2	米田大学	X	X	X	X	X	X	卒業
Abdulloh AL-ABDULKARIM	88	88.4	国内短大	X	X	X	X	X	X	
Salsabano AL-SERAM	80	80.9	国内短大	X	X	X	X	X	X	94.9月~日本留学
Fahid AL-NORIEDDIN	80	90.9	国内短大	X	X	X	X	X	X	
Abderrahmo AL-SHERAR	71.10.24	83.12	国内短大	X	X	X	X	X	X	
Enlid AL-KOTAYNA	67.7.01	81.12	国内短大	X	X	X	X	X	X	
Muhammad AL-HAGBARI	69.7.01	92.9	国内短大	X	X	X	X	X	X	現在本邦にて研修中
Muhammad AL-KHABRY	62	88.4	国内短大	X	X	X	X	X	X	他校研修
Aiz AL-SAYTANI	86	89.9	国内短大	X	X	X	X	X	X	他校研修
Aband AL-ZHIRANI	82	90.9	国内短大	X	X	X	X	X	X	95.12月~日本留学
Faleh AL-ADWANA	83	88.4	国内短大	X	X	X	X	X	X	
Yalid AL-BARALY	60	89.9	国内短大	X	X	X	X	X	X	95.12月~日本留学
Saleh AL-SALGI	88	90.9	国内短大	X	X	X	X	X	X	
Yassur AL-NORIEDD		93.12	国内短大	X	X	X	X	X	X	95.12月~日本留学
Gazi AL-ASAKHI	84	88.4	国内短大	X	X	X	X	X	X	91.4月~米田留学
Saleh AL-ELISSA	86	89.9	国内短大	X	X	X	X	X	X	95.12月~日本留学
Abdullah AL-DENAJER	87	90.9	国内短大	X	X	X	X	X	X	
Sami AL-IBRAH	70	93.12	国内短大	X	X	X	X	X	X	
Saeed AL-GHARDI	85	88.4	国内短大	X	X	X	X	X	X	他校研修
Fahd AL-JAWAN	85	89.9	国内短大	X	X	X	X	X	X	
Monseer AL-NISABCHY	86	90.9	国内短大	X	X	X	X	X	X	95.12月~日本留学
Yalid AL-KUSSARI	89	93.9	国内短大	X	X	X	X	X	X	
Rafiq AL-ZAHK	80	93.8	国内短大	X	X	X	X	X	X	
Dr. Fahd AL-TUHAJRY	84.5.30	94.11	米田大学	X	X	X	X	X	X	知本協会の英語研修生
Dr. Turki AL-TURKI	87.2.02	94.11	米田大学	X	X	X	X	X	X	
Dr. Khalid AL-RAJEN	84.11.06	94.11	米田大学	X	X	X	X	X	X	
Dr. Abdulmunez AL-TUHAJRY	84.11.06	94.11	米田大学	X	X	X	X	X	X	
Yasad AL-KHAIWAT	84.2.01	94.11	米田大学	X	X	X	X	X	X	
Youssef AL-KHAIWAT	88.1.22	94.11	米田大学	X	X	X	X	X	X	
Salim DARRAS	88.6	94.11	米田大学	X	X	X	X	X	X	

* 研修生等... A: 研修期間中に研修生となった者 B: 研修後のベースで研修を終了した者 C: 研修期間中に研修生となった者 D: 研修期間中に研修生となった者 E: 研修期間中に研修生となった者 F: 研修期間中に研修生となった者 G: 研修期間中に研修生となった者 H: 研修期間中に研修生となった者 I: 研修期間中に研修生となった者 J: 研修期間中に研修生となった者 K: 研修期間中に研修生となった者 L: 研修期間中に研修生となった者 M: 研修期間中に研修生となった者 N: 研修期間中に研修生となった者 O: 研修期間中に研修生となった者 P: 研修期間中に研修生となった者 Q: 研修期間中に研修生となった者 R: 研修期間中に研修生となった者 S: 研修期間中に研修生となった者 T: 研修期間中に研修生となった者 U: 研修期間中に研修生となった者 V: 研修期間中に研修生となった者 W: 研修期間中に研修生となった者 X: 研修期間中に研修生となった者 Y: 研修期間中に研修生となった者 Z: 研修期間中に研修生となった者

【リアド電子技術学院プロジェクト供与機材利用状況】 (1) 工高プログラムへの供与機材 (160万円以上の機材)

供与年度	番号	機材名：メーカー (型式)	価格	数量	利用 (保管) 場所	利用状況	管理状況	備考
平成元年	H1-1	コンピュータ学習システム : JADEC	98,750	12セット	コンピュータ実習室	A	A	Dc207 (FS-1)
	H1-2	コンピュータLANシステム : IBM	76,730	2システム	コンピュータ実習室	A	A	Dc201, Dc202 (FS-1)
	H1-3	コンピュータネットワーク配線システム : ARRESTY (Movaflex-500S)	23,280	2セット	〃	A	A	Dd201, Dd202 (FS-1)
	H1-4	コンピュータLANソフトウェア : IBM	19,990	2セット	〃	A	A	Dd201, Dd202 (FS-1)
	H1-5	電子機器測定システム : ビース (PET-11D)	68,100	30セット	電子工作室	A	A	Dc201, Dc203 (FS-5)

※価格単位：×千円

【リアド電子技術学院プロジェクト供与機材利用状況】 (2) 工高プログラムへの供与機材 (160万円未満の機材)

供与年度	番号	機材名：メーカー (型式)	供与数	処分数	現存数	利用状況	管理状況	備考
平成元年	H1-01	オペレーションアンプ実習装置 : 富士グイックス (FT-510)	15セット	0	15セット	A	A	Db201 (FS-8)
	H1-02	パルスサークキット実習装置 : 富士グイックス (FT-530)	15セット	0	15セット	A	A	Db202 (FS-9)
	H1-03	トランジスタ回路実習装置 : 富士グイックス (FT-200)	15セット	0	15セット	A	A	Db201 (FS-8)
	H1-04	ロジック回路実習装置 : 富士グイックス (FT-360)	15セット	0	15セット	A	A	Db202 (FS-9)
	H1-05	オシレータ実習装置 : 富士グイックス (FT-500)	15セット	0	15セット	A	A	Db201 (FS-8)
	H1-06	シーケンスコントロール実習装置 : 富士グイックス (FT-700)	15セット	0	15セット	A	A	Db202 (FS-9)
	H1-07	セミコンダクタ実験装置 : 島津理器 (KSC-3)	15セット	0	15セット	B	A	短大側に移管、暫定的に使用中
	H1-08	二現象オシロスコープ : カウント (CS-1022)	60セット	0	60セット	A	A	Db201 (FS-8), Db202 (FS-9)
	H1-09	定電圧直流電源実験装置 : 島津理器 (KPD-5)	45セット	0	45セット	A	A	Db201 (FS-8)
	H1-10	ガウスメーター : 内田洋行 (KG-600U)	15セット	0	15セット	B	A	短大側に移管、暫定的に使用中
	H1-11	プリント基板製造器 (マシニングユニット) : プリント電子 (ME-3T)	1セット	0	1セット	B	A	Dc202 (FS-5)
	H1-12	〃 (ライトボックス) : カウント (BOX W10)	5セット	0	5セット	A	A	Dc202 (FS-5)
	H1-13	〃 (洗浄槽) : プリント電子 (MP1001)	1セット	0	1セット	A	A	Dc202 (FS-5)
	H1-14	〃 (ドライブコクター) : プリント電子 (MDP-2)	1セット	0	1セット	A	A	Dc202 (FS-5)
	H1-15	ミリボルトアメーター : 菊水電子 (115A)	30個	0	30個	A	A	Dc202 (FS-5)
	H1-16	ボール盤 : 吉良 (ARTC-340)	10セット	0	10セット	A	A	Db201 (FS-8), Db202 (FS-9)
	H1-17	直流標準電圧電流発生器 : 横河電気 (2422)	30セット	0	30セット	B	A	短大側に移管、暫定的に使用中
平成2年	H2-01	フアクシミリ実習装置 : 松下電工 (MS-02)	6セット	0	6セット	B	A	〃
	H2-02	セキユリナイアホン実習装置 : 松下電工 (103)	6セット	0	6セット	B	A	〃
	H2-03	ホームエレクタロトロン実習台 : 松下電工 (特別製作)	30セット	0	30セット	B	A	〃

〔リアド電子技術学院プロジェクト供与機材利用状況〕(3)短大昇格準備プログラムへの供与機材

供与年度	番号	機材名：メーカー(型式)	供与数	処分数	現存数	利用状況	管理状況	備	考
平成7年	H7-01	デジタル制御実習システム : Armfield	5セット	0	5セット	A	A		
	H7-02	電子回路実習システム : LJ Tech	15セット	0	15セット	A	A		
	H7-03	診断テストシステム : Fluke	1セット	0	1セット	A	A		
	H7-04	パーソナルコンピュータ : Compaq	25セット	0	25セット	A	A		
	H7-05	プリンター : HP	15セット	0	15セット	A	A		
	H7-06	アナログモジュレーション実習システム : HPS	5セット	0	5セット	A	A		
	H7-07	アナログ制御実習システム : Feedback	5セット	0	5セット	A	A		
	H7-08	デジタル変換機実習システム : Feedback	5セット	0	5セット	A	A		
	H7-09	パワーエレクトロニクス実習システム : Feedback	8セット	0	8セット	A	A		
	H7-10	モジュレーションボード : HPS	5セット	0	5セット	A	A		
	H7-11	デジタルモジュレーション実習システム : HPS	5セット	0	5セット	A	A		
	H7-12	マイクログストリップトレーナー : Feedback	5セット	0	5セット	A	A		
	H7-13	電話システムチューター : Feedback	5セット	0	5セット	A	A		
	H7-14	デジタル信号演算実験装置マイコン : Texas Instruments	1セット	0	1セット	A	A		
	H7-15	デジタル信号演算実験装置プログラマ : Texas Instruments	2セット	0	2セット	A	A		
	H7-16	マイクロプロセッサ開発システム : HP	1セット	0	1セット	A	A		
	H7-17	マイクロプロセッサ開発システム : HP	3セット	0	3セット	A	A		
	H7-18	複写機 : RICOH	1セット	0	1セット	A	A		

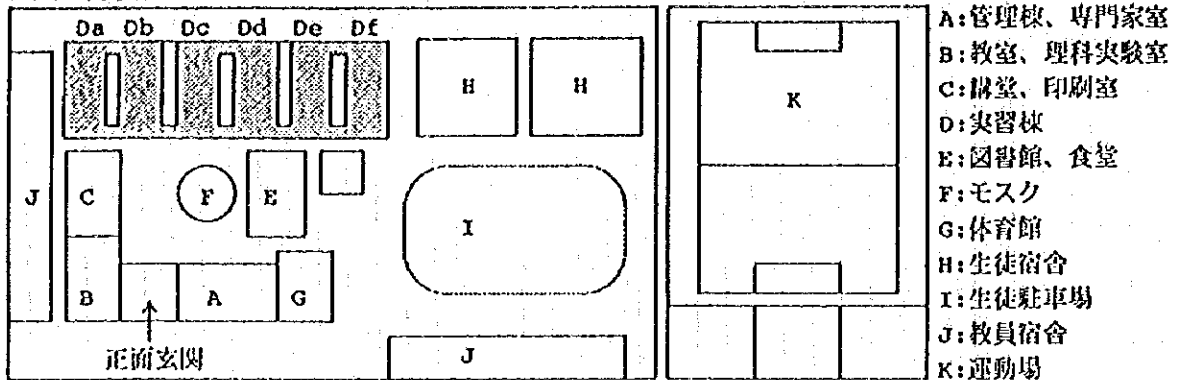
〔補足〕
各システムは次の型式の機器により構成される。

- H7-01: Armfield PCT9, PCT10SC-B, PCT10-10, PCT11, PCT12, PCT13, PCT14, PCT15, PCT16, PCT17, 486DX4-100MHz PCTPGH2811
- H7-02: LJ Tech Digitac3000-3-1, Digitac3000-3-2
- H7-03: Fluke FT9100/SYS
- H7-04: Compaq M-630+qvision15", Software (Circuit Maker, OrCAD)
- H7-05: HP 5L
- H7-06: HPS 4270
- H7-07: Feedback Ms-150, 33-001, 01-10
- H7-08: Feedback TK-2942, 01-100
- H7-09: Feedback PE481, PE484
- H7-10: HPS 4280, 4280-1, 4280-20, V0130
- H7-11: HPS 4250, 4100
- H7-12: Feedback MST532
- H7-13: Feedback 53-100, 58-100, 58-110
- H7-14: TMD3242850-02, TMD3240811-02, TMD3243851-02, TMD3243855-02, DFPD
- H7-15: TMD300510M, TMD3240130, RTCIALB320A-06
- H7-16: HP 8711B, 8711B#1DA, 8711B#1E1, 85032E, 862003, 86205A, 11853A, 11854A, 8120-4781, 8120-1839
- H7-17: HP 8590L
- H7-18: RICOH FT6655+sorter

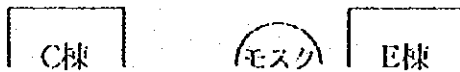
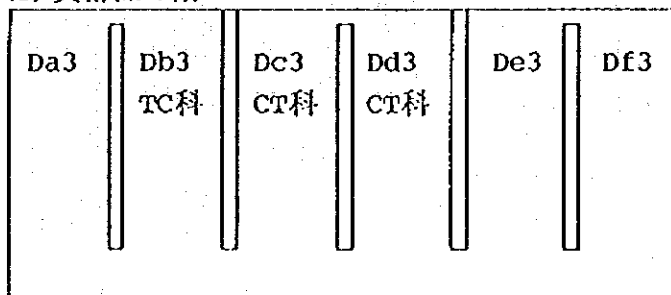
【第3学年学科実習室概要】

H8.3.01.RTEI7'07'1外

(1) 建物全図

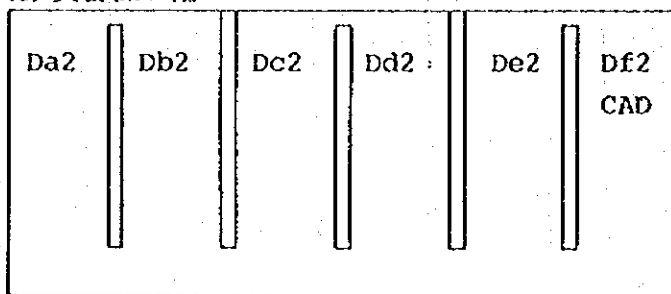


(2) 実習棟3階



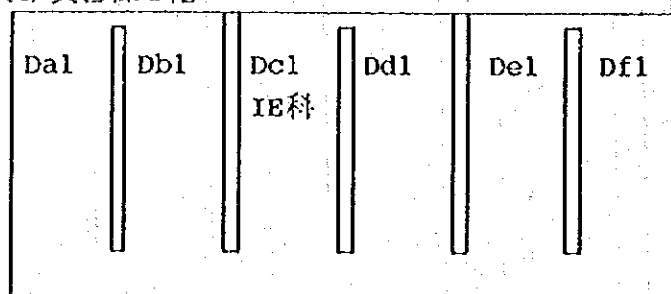
- TC:Db301:TC科課題研究室
- Db305:アンテナ実習室
- Db306:マイクロ波実験室
- Db308:ラジオ受信機実習室
- Db309:無線局実習室
- Db310:レーダー実習室
- Db311:有線・電話通信実習室
- Db312:データ・デジタル通信実習室
- CT:Dc301:CAD実習室
- Dc304:ネットワーク実習室
- Dc305:CT科課題研究室
- Dc306, 308:ハードウェア実習室
- Dc307:マイクロプロセッサ実習室
- Dc309:ドラッグ・コンピューティング実習室
- Dd301, 306:プログラミング実習室
- Dd304, 307:ワークステーション実習室

(3) 実習棟2階



Dd201:CAD実習室 (3年共通科目)

(4) 実習棟1階



- IE:Dc101:回転機器実習室
- Dc104:高周波・超音波応用と電子計測・制御実習室
- Dc105:パワーエレクトロニクス実習室
- Dc106:IE科課題研究室
- Dc107:マイクロプロセッサ実習室

教科書リスト

- (1) Electronic Technology 1A
- (2) Electronic Technology 1B
- (3) Electricity Fundamentals
- (4) Information Technology Fundamentals
- (5) Electronics Drawing
- (6) Instrumentation and Control
- (7) Electrical Engineering 1A
- (8) Electronic Technology 2A
- (9) Electronic Technology 2B
- (10) General Teaching Guideline for the Workshops and Laboratories
in Electronics Institute in Riyadh
- (11) Project Study
- (12) Electronic Technology 3
- (13) Audio Video
- (14) Industrial Electronics
- (15) Automatic Control
- (16) Telecommunications
- (17) Computer Technology
- (18) Electronic Drawing (CAD)

実習指導書リスト

(1) Industrial Electronics Department

- | | |
|--|--------|
| 1) Project Study | (IE-1) |
| 2) Microprocessor/Logic Circuit Technology | (IE-5) |
| 3) Power Electronics | (IE-6) |
| 4) Measurement/Control | (IE-7) |

(2) Telecommunications Department

- | | |
|----------------------------------|--------|
| 1) Project Study | (TC-1) |
| 2) Wire/Telephone Communication | (TC-5) |
| 3) Radio/Microwave Communication | (TC-6) |
| 4) Data/Digital Communication | (TC-7) |

(3) Computer Technology Department

- | | |
|--|--------|
| 1) Project Study | (CT-1) |
| 2) Computer Hardware | (CT-5) |
| 3) Computer Peripheral Unit | (CT-6) |
| 4) Computer Software and Diagnosis Technique | (CT-7) |

[Practice of Industrial Electronics Dept.]

- 1. IE-1:Project Study (Themes in 1995/1996) (4 credits)**
- 1) Control practice of mechanical robot arm
 - 2) Sequential control of elevator
 - 3) Practice of ultrasonic application
 - Ultrasonic flaw detector
 - Ultrasonic digital thickness
 - Ultrasonic drilling machine
 - Ultrasonic hand welder
 - 4) Electronic workshop (Electronic roulette)
- 2. IE-5:Microprocessor/Logic Circuit Technology (4 credits)**
- 5-1:Machine language programming 1 (2 weeks)
- 1) Control word and LEDs on-off :LD, OUT
 - 2) Switch data input and the data display :IN, OUT
- 5-2:Machine language programming 2 (4 weeks)
- 1) Output control by switches (LED, relay and DC motor) :JMP
 - 2) Time delay programming (Buzzer and sound output) :Flag JMP
 - 3) Stop watch by timer (Subroutine) :CALL
 - 4) Program to compare the size of numbers :CP
- 5-3:Machine language programming 3 (10 weeks)
- 1) Melody module, the amplifier module and the speaker module
 - 2) Display module and the sound module
 - 3) Variable width one shot pulse module and DC motor module
 - 4) Temperature sensor
 - 5) D/A converter module
 - 6) Xylophone control robot
 - 7) Stepping motor drive
 - 8) A/D converter module
 - 9) One chip microcomputer for temperature measurement
- 5-4:Development of Programming by Microprocessor (12 weeks)
- 1) EPROM writer module and EPROM eraser
 - 2) Intelligent terminal module
 - 3) Photo-coupler transmission module
 - 4) Drill module
 - 5) Transfer robot module
 - 6) Servo feedback control unit.
- 3. IE-6:Power Electronics (4 credits)**
- 6-1:Single-phase rectifier, 3-phase rectifier circuits (3 weeks)
 - 6-2:Characteristics of AC stabilized power supply (2 weeks)
 - 6-3:Characteristics of DC stabilized power supply (2 weeks)
 - 6-4:Control characteristics of power devices (3 weeks)
 - 6-5:Fundamental of inverter (3-phase PWM) (4 weeks)
 - 6-6:Uninterruptible power supply (PWM inverter) (4 weeks)
 - 6-7:Various motor control (5 weeks)
 - 6-8:Measurement by ultrasonic defect searcher (2 weeks)
 - 6-9:Application of ultrasonic (washing, wetting, welding, processing) (3 weeks)

4. IB-7: Measurement/Control	(4 credits)
7-1-1: Sequencer control practice	(2 weeks)
7-1-2: Sequential control of motor	(2 weeks)
7-2: Sequential control of elevator	(4 weeks)
7-3: Servo feedback control	(3 weeks)
7-4: Feedback control of DC motor	(3 weeks)
7-5: Positioning control	(3 weeks)
7-6: Control of robot arms	(4 weeks)
7-7: Electronic measurement by computer	(3 weeks)
7-8: Temperature and humidity testing	(3 weeks)
7-9: Laser experiment	(1 week)

[Practice of Telecommunication Dept.]

TC-1:Project Study (Themes in 1995/1996)	(4 credits)
1) Processing technique of optical fiber	
2) Basic experiment of digital communication	
3) Assembling telephone	
4) Computer communication	
TC-5:Wire/Telephone Communication	(4 credits)
5-1:Transmission lines	(3 weeks)
5-2:Attenuator and filter	(2 weeks)
5-3:Integrated Services Digital Network (ISDN)	(3 weeks)
5-4:Transmission test of digital signals	(3 weeks)
5-5:Data transmission	(3 weeks)
5-6:Data transmission network	(3 weeks)
5-7:Optical communication	(3 weeks)
5-8:Modulation and demodulation	(3 weeks)
5-9:Pulse code modulation	(3 weeks)
5-10:Facsimile terminal equipment	(2 weeks)
TC-6:Radio/Microwave Communication	(4 credits)
6-1:Electric field intensity	(3 weeks)
6-2:Characteristics of antennas	(3 weeks)
6-3:Radio station	(3 weeks)
6-4:AM radio receiver	(3 weeks)
6-5:FM radio receiver and transmitter	(3 weeks)
6-6:AM/SSB transmitter and receiver	(3 weeks)
6-7:Mobile radio receiver and transmitter	(3 weeks)
6-8:Microwave communication	(3 weeks)
6-9:Radar system	(4 weeks)
TC-7:Data/Digital Communication	(4 credits)
7-1:Time Division Multiplexer and Frequency Division Multiplexer	(3 weeks)
7-2:Dual-Tone Multi-Frequency technique	(3 weeks)
7-3:PLL technique	(4 weeks)
7-4:Telephone network and switch board	(4 weeks)
7-5:Packet electronic switching system	(4 weeks)
7-6:Personal computer communication	(3 weeks)
7-7:Local Area Network (LAN)	(4 weeks)
7-8:PCM switching	(3 weeks)

[Practice of Computer Technology Dept.]

1. CT-1: Project Study (Themes in 1995/1996) (4 credits)
 - 1) Assembling microcomputer (Microcomputer hardware)
 - 2) Assembling SUMO robot (Control by computer)
 - 3) C++ (Programming language)
 - 4) Visual C++ (Programming language)
 - 5) Access (Database)

2. CT-5: Computer Hardware (4 credits)
 - 5-1: Logic basic circuit (1 week)
 - 5-2: Operation of flip-flop circuit and counter circuit (1 week)
 - 5-3: Operation of exclusive logic sum coincidence circuit (1 week)
 - 5-4: Adder and subtractor (1 week)
 - 5-5: Operation of implication circuit and parity generator circuit (1 week)
 - 5-6: Binary-decimal converter circuit (1 week)
 - 5-7: Operation of shift register (1 week)
 - 5-8: Data transfer (1 week)
 - 5-9: Data transfer between register (1 week)
 - 5-10: Data transfer between register and memory (1 week)
 - 5-11: About computer trainer (1 week)
 - 5-12: Coding form (1 week)
 - 5-13: Read and write functions (1 week)
 - 5-14: Fetch cycle (1 week)
 - 5-15: Executive cycle (1 week)
 - 5-16: Overflow (1 week)
 - 5-17: Assembler 1 (Ass, Sum, Multiply) (1 week)
 - 5-18: Assembler 2 (Divide, Mean Value, LCM, GCM) (1 week)
 - 5-19: Structure of a 16-bit CPU (1 week)
 - 5-20: Structure of a computer (1 week)
 - 5-21: Trouble shooting on computer (1 week)
 - 5-22: Operation of minicomputer (1 week)
 - 5-23: Running check of minicomputer (2 weeks)
 - 5-24: Network standards (1 week)
 - 5-25: Transmission devices (1 week)
 - 5-26: Signal transmission and distribution devices (1 week)
 - 5-27: Network operating system (1 week)

3. CT-6: Computer Peripheral Unit (4 credits)
 - 6-1: Key board, mouse (2 weeks)
 - 6-2: Display (2 weeks)
 - 6-3: Memory IC (2 weeks)
 - 6-4: Ink jet printer (2 weeks)
 - 6-5: Laser printer (2 weeks)
 - 6-6: Floppy disk drive (2 weeks)
 - 6-7: Hard disk drive (2 weeks)
 - 6-8: Bar code reader (2 weeks)
 - 6-9: Bar code printer (2 weeks)
 - 6-10: CD ROM (2 weeks)
 - 6-11: MO disk (2 weeks)

- | | |
|---|--------------------|
| 3. CT-6: Computer Peripheral Unit (continued) | |
| 6-12: Sound unit | (2 weeks) |
| 6-13: Video unit | (2 weeks) |
| 6-14: Color scanner | (2 weeks) |
|
 | |
| 4. CT-7: Computer Software and Diagnosis Technique | (4 credits) |
| 7-1: Operating system (MS-DOS) | (2 weeks) |
| 7-2: Operating system (MS-WINDOWS) | (2 weeks) |
| 7-3: Application software | (4 weeks) |
| 7-4: Operating system (UNIX) | (5 weeks) |
| 7-5: C language | (12 weeks) |
| 7-6: File management and maintenance | (1 week) |
| 7-7: Diagnosis practice computer | (2 weeks) |

