

Appendix 5

Counterpart Personnel Training in Japan

FY 1988

1. Asst.Prof.Thawil Kingthong	Telecommunications	Jul.28 - Nov.20, 1988
2. Asst.Prof.Narong Haemmakorn	Telecommunications	Sep. 1 - Dec.22, 1988
3. Dr. Kanok Jainchirapongvej	Broadcasting	Oct. 2 - Nov.24, 1988
4. Dr. Kittima Mekhabunchakij	Data Communication	Jan.12 - Feb.28, 1989
5. Mr. Wicha Sripanyapong	Data Communication	Mar. 7 - May 23, 1989
6. Asst.Prof.Thaveesak Tescharoen	Mechanical Engineering	Oct.31 - Nov.30, 1988

FY 1989

1. Mr. Kemthong Nimsiri	Telecommunications	Aug.17 - Nov. 3, 1989
2. Asst.Prof.Monai Krairiksh	Telecommunications	Oct.24 - Dec.23, 1989
3. Asst.Prof.Sukon Nampetch	Telecommunications	Mar. 6 - Apr.14, 1990
4. Dr. Anan Chailertvanikul	Broadcasting	May 15 - Jul.14, 1989
5. Mr.Praiboon Pantarakpong	Data Communication	Jul.11 - Sep.12, 1989
6. Mr. Petch Suttinanondh	Data Communication	Mar.21 - Jun.29, 1990
7. Mr.Somchai Deemark	Data Communication	Mar.21 - Jun.16, 1990
8. Asst.Prof.Pornsak Attavanich	Mechanical Engineering	Mar.20 - Sep.30, 1990
9. Dr.Yothin Prempraneerach	Mechanical Engineering	Mar.20 - May 31, 1990

FY 1990

1. Asst.Prof.Tawil Puangma	Telecommunications	Jun. 3 - Sep. 2, 1990
2. Asst.Prof.Suchin Jamjod	Telecommunications	Jan.10 - Mar.11, 1991
3. Mr.Uthai Sritheeravirojana	Broadcasting	Jul.16 - Oct. 4, 1990
4. Mr.Pradit Vachrapibool	Broadcasting	Jan.16 - Mar. 3, 1991
5. Mr.Prasert Poomsirichayo	Data Communication	Jul.11 - Sep. 3, 1990
6. Asst.Prof.Akradech Sindhuphak	Mechanical Engineering	Oct. 1,1990 - Apr.15, 1991
7. Asst.Prof.Somchai Norasethasopon	Mechanical Engineering	Oct. 1,1990 - Apr. 1, 1991

FY 1991

1. Assoc.Prof.Manoon Sukkasem	Telecommunications	Oct.23 - Dec.23, 1991
2. Dr.Kobchai Dejhan	Telecommunications	Nov.19 - Dec.19, 1991
3. Asst.Prof.Apinun Manyanon	Telecommunications	Feb.11 - Mar.25, 1992
4. Asst.Prof.Nikorn Sukutamatanti	Broadcasting	Sep.30 - Dec.28, 1991
5. Asst.Prof.Vichai Surapat	Broadcasting	Jan.16 - Mar. 3, 1992
6. Mr.Watchara Chatwiriya	Data Communication	Sep.10,1991 - Mar.29, 1992
7. Miss Duangporn Sriwatana	Data Communication	Mar.10 - May 26, 1992
8. Mr.Prasit Kampanyim	Mechanical Engineering	May 15,1991 - Jun.15, 1992

FY 1992

1. Asst.Prof.Monai Krairiksh	Telecommunications	May 25 - Jun.30, 1992
2. Dr.Suvepon Sitthichivapak	Telecommunications	Sep.15 - Oct.30, 1992
3. Mr.Chawalit Benjankprasert	Broadcasting	
4. Mr.Attasit Lasakul	Broadcasting	Jun.30,1992 - Feb.23, 1993
5. Dr.Voravat Limpoka	Data Communication	Jun. 7 - Jun.26, 1992
6. Mr.Akharin Khunkitti	Data Communication	Nov. 5,1992 - Dec.22, 1992
7. Mr.Chamlong Prabkeao	Mechanical Engineering	Jun. 2,1992 - Mar.31, 1993
8. Mr.Tawatchai Nakpipat	Mechanical Engineering	Dec. 8,1992 - May 29, 1993

Appendix 6

6-1. Name List of Counterparts (Telecommunications)

Name	Position	Age	Graduation	Speciality
1.Dr.Kobchai Dejhan	Head of Dept. Assistant Professor	35	BEng, MEng(KMITL), DEng(ENST)	Digital signal processing, VLSI design
2.Mr.Manoon Sukkasem	Associate Professor	50	BEng, MEng(Tokai)	Switching, Network, ISDN
3.Dr.Wiwat Kiranon	Associate Professor	40	BEng(KMITL), MEng, DEng(Tokai)	Communication theory, Communication circuit
4.Mr.Tawil Paungma	Associate Professor	36	BEng, MEng(KMITL)	Switching & Terminals, ISDN
5.Dr.Charay Surawatpanya	Associate Professor	37	BEng(KMITL), MEng, DEng(Osaka)	Electromagnetic wave circuit, EMC/EMI
6.Mr.Apinun Manyanon	Assistant Professor	46	DEng(Tokai), MEng(Dentu)	Optical fiber communication, Microwave communication
7.Mr.Narong Hemmakorn	Assistant Professor	48	BEng, MEng(Tokai)	Satelite & microwave communication
8.Mr.Roong Potisuwan	Assistant Professor	56	BEd(SWU)	Radio communication
9.Mr.Suchin Jamjod	Assistant Professor	55	BEng(KMITL)	Telephone switching
10.Mr.Tawil Kingtong	Assistant Professor	45	BEng, MEng(Tokai)	Line transmission, Multiplex system
11.Mr.Sompol Kosalwit	Assistant Professor	47	BEng, MEng(Tokai)	Antenna & Microwave component
12.Mr.Monai Krairiksh	Assistant Professor	33	BEng, MEng(KMITL)	High frequency circuit, Antenna
13.Mr.Kemthong Nimsiri	Lecture	55	BEng(KMITL)	Outside plant, Optical fiber
14.Ms.Nipa Leelaruji	Lecture	42	BEng(KMITL)	Radio communication
15.Mr.Sukon Nampetch	Lecture	55	BEng(KMITL)	Telex & Facsimile

Name	Position	Age	Graduation	Speciality
16.Mr.Somyot Junpiya	Lecture	37	BIndustrial Tech. MEng	Electronic circuit
17.Mr.Pramote Wardkien	Lecture	27	BSc(SWC), MEng(KMITL)	Data communication
18.Dr.Suvipol Sittichevapak	Lecture	29	BEng(KMITL), MEng(Osaka), Ph.D.(Kobe)	Computer communication
19.Mr.Kriangkral Wongrojanaporn	Lecture	39	BEng(KMITL), M.S.E.E.(Ohio)	Computer communication
20.Mr.Sutichai Noppanakeepong *	Lecture	33	BEng, MEng(KMITL)	Optical fiber communication, Data communication
21.Mr.Thongtod Vanishri **	Lecture	28	BEng, MEng(KMITL)	Satelite communication circuit, Optical circuit
22.Mr.Punya Thitimajshima ***	Lecture	35	BEng, MEng(KMITL)	Digital signal processing

Remarks SWE :Srinakharin Wiroj University (Thailand)
 ENST :Ecol Nationale Superieure Des Telecommunications (Telecom Paris)
 Dentu :Tokyo Denkitsuushin University

* Mr.Sutichai :Studying in Doctor course in Tokyo Institute of Technology
 ** Mr.Thongtod :Studying in Doctor course in Imperial College of Science,
 Technology snd Medicine (England)
 *** Mr.Punya :Studying in Doctor course in University of Brest (France)

6-2. Name List of Counterparts (Broadcasting)

Name	Position	Age	Graduation	Speciality
1. Mr.Pradit Vatcharapiboon	Head of Dep. Lecturer	49		Television Engineering
2. Dr.Kanok Janchirapongvej	Assistant Professor	49	B.Eng(Hons,KMITL) M.D.Eng(Tokai)	Video Waveform Transmission
3. Mr.Vichai Surapart	Assistant Professor	49	B.Eng(KMITL) M.Eng(Chula)	Television Engineering
4. Mr.Nikorn Sukutamanti	Assistant Professor	40	B,M.Eng(KMITL)	Electronics Circuit
5. Dr.Anan Chailertvanitkul	Lecturer	38	B,M.Eng(Yokohama) D.Eng(TIT)	Opto Electronics
6. Dr.paisal Nakpipat	Lecturer	44	B.Eng(Chiengmai) Ph.D(Toulouse)	Chemistry Computer
7. Mr.U-Thai Sritheeravirojn	Lecturer	49	Grad.dip.in EE B.ind.tech.(TV)	Television Engineering
8. Mr.Somphop Kaewmechai	Lecturer	36	B.Ind.Tech.(TV)	Television Engineering
9. Mr.Attasit Lasakul	Lecturer	28	B.Ind.(Elec.) M.Eng.Tech.(KMITL)	Computer
10. Mr.Chawalit Benjangkprasert	Lecturer	29	B.Ind.(Elec.) M.Eng.(KMITL)	Electronics & Computer
11. Mr. Paisan Sithiyopasakul	Lecturer	29	B.Ind.Tech.(Comp.) M.Eng.(KMITL)	Electronics & Computer
12. Mr. Chakree Teekapakvisit	Lecturer	24	B.Ind.Tech.(Elec.)	Electronics
13. Mr. Kitdakorn Klankarn	Lecturer	29	B.Ind.Tech.(Tele.)	Computer
14. Mr. Dolchai Sukcharaunkul	Lecturer	27	B.Ind.Tech.(Elec.)	Tele- communications
15. Ms. Ruenruedee Dumrongsuwat	Lecturer	25	B.Eng(Chienmai)	Industrial Chemistry

6-3. Name List of Counterparts (Data Communication)

Name	Position	Age	Graduation	Speciality
Computer Research and Service Center				
1. Dr.Chom Kimpan	Director	48	D.Eng.(KMITL)	Pattern Recognition
2. Dr.Vorawat Limpoka	Deputy Director		D.Eng.(INPG)	Computer Network
3. Mr.Surasit Vannakrairojn	Deputy Director	33	M.Eng.(KMITL)	CAD/CAM Design
4. Mr.Pantamit Channut	Head(Office)	34	B.A.(RU)	
5. Mr.Praiboon Pantarakpong	Head(System & Programming)	32	MBA.(NIDA)	Computer Programming
6. Mr.Yuttapong Rangsanweree	System Eng.	32	M.Eng.(KMITL)	Digital Filter
7. Mr.Somchai Deemak	Head of Micro Computer Lab.	32	B.Ind.Tech.(KMITL)	Software Application
8. Mr.Chatchai Naksuthi	Computer Operators	28	Dip.(Electronics)	
9. Mr.Wicha Sripanyapong	Head(System Operation & Maintenance)	33	B.Eng.(KMITL)	Computer Circuit
10. Mr.Prasert Poomsirichayo	Computer Operators	32	B.Ind.Tech(KMITL)	
11. Mr.Akarin Khunkiti	Engineer	26	M.Eng.(KMITL)	Computer Tomography
12. Mr.Narongsak Jaiyu	Technician	29	Dip.(Electrical)	
13. Mr.Manoon Chinnakarn	Head(Academic Affairs)	35	M.Eng.(KMITL)	Computer Network
14. Ms.Duangporn Sriwattana	Academic staff	38	B.Sc.(RU)	
15. Mr.Kawin Sontipermpoon	M.Eng.(KMITL)	30	M.Eng.(KMITL)	Computer Tomography
16. Mr.Suvit Yomwan	Technicians	28	Dip.(Electronics)	
17. Mr.Waiyavudth Saithanoo	Technicians	25	Dip.(Electronics)	
Department of Computer Engineering				
1. Dr.Pairash Thajchayapong	Professors	48	Ph.D.(Cantap)	Signal Processing
2. Dr.Srisakdi Charmonman	Professors	55	Ph.D.(Georgia Tech)	Compiler
3. Dr.Chom Kimpan	Assoc.Prof.	48	D.Eng.(KMITL)	Pattern Recognition
4. Mr.Pratheep Bunyatroparat	Assoc.Prof.	43	M.Eng.(Tokai)	Data Communication

Name	Position	Age	Graduation	Speciality
5. Dr.Boonwat Attachoo	Asst. Prof.	36	D.Eng.(Tokai)	Image Processing
6. Dr.Vorawat Limpoka	Lecturers	36	D,Eng.(INPG)	Computer Network
7. Dr.Supramit	Lecturers	35	Ph.D.(Queensland)	Database
8. Dr.Boonthee Kruatrachoo Chittayasothorn	Lecturers	32	Ph.D.(Oregon)	Operating System
9. Mr.Bunjong Piyatamrong	Lecturers	33	M.S.(Louisiana)	VLSI Design
10. Mr.Wiboon Promphanich	Lecturers	30	M.Eng.(AIT)	Software Eng.
11. Mr.Watchara Chatwiriya	Lecturers	29	B.Eng.(KMITL)	Computer Eng.
12. Mr.Somsak Chumchuay	Lecturers	33	M.Eng.(KMITL)	VLSI Dsign
13. Ms.Kritawan Kruatrachue	Lecturers	34	M.Eng.	Software Eng.
14. Dr.Aueng Pinhean	Lecturers	42	Ph.D (Oregon)	AI
15. Mr.Paasaan Tanthisannon	Lecturers	32	M.Eng.(KMITL)	Computer Application
16. Mr.Aphinet Aunakol	Lecturers	23	B.Eng.	Computer System

Department of Applied Mathematics and Information Technology

1. Mr.Vichein Srisuakam	Head,Dept.of Math. &Comp.	56	M.Sc.(Tokai)	Mathematics
2. Ms.Ubolwanna Ngernwichit	Associate Professors	44	M.A.(Marshall)	Mathematics
3. Ms.Pakkinee Jimrevat	Assoc. Dean For Information System	36	M.Sc.(Mahidol)	Mathematics

6-4. Name List of Counterparts (Mechanical Engineering)

Name	Position	Age	Graduation	Speciality
1.Dr.Mongkol Mongkolwongroj	Head of Dept. Assistant Professor	40	BEng(Hons), Ph.D.(UW- Madison)	Tribology
2.Mr.Somchai Norasethasophon	Associate Professor	36	BEng(KMITN), MEng(Chula)	Solid Mechanics
3.Mr.Thavee Tescharoen	Assistant Professor	43	BEng(KMITN)	Manufacturing Process
4.Mr.Akradech Sindhuphak	Assistant Professor	51	BEng(KMITL), MS(West Coast)	Noise Control
5.Mr.Pongjait Promwong	Assistant Professor	36	BEng(KKU), MEng(Chula) Study abroad (Imperial College)	Thermal Engineering
6.Mr.Pornsak Attavanich	Assistant Professor	40	BEng(PSU)	Material Engineering
7.Mr.Attason Soontornchati	Lecturer	58	BEng(KMITT)	Automotive Engineering
8.Mr.Chakrid Wanasiri	Lecturer	30	BEng(KMITL), MEng (Imperial College)	Solid Mechanics
9.Mr.Chamlong Prabkaeo	Lecturer	34	BSIED(KMITN)	Fluid Engineering
10.Mr.Ming Lokitsaenglong	Lecturer	38	BEng(Tasmania), MEng(KMITT) Study abroad (Imperial College)	Solid Mechanics
11.Mr.Prasit Kampanyim	Lecturer	40	BSIED(KMITN)	Welding Technology
12.Mr.Tawatchai Nakpipat	Lecturer	40	BEng(KMITT)	Automotive Engineering
13.Mr.Chinda Charoenphonphanich	Lecturer	23	BEng(KMITL), Study abroad (Tokai Univ.)	ditto
14.Mr.Jaruwat Charoensuk	Lecturer	23	BEng(Hons) (KMITL), Study abroad (Imperial College)	Combustion Engineering

Name	Position	Age	Graduation	Speciality
15.Mr.Chinnarak Tienpong	Lecturer	23	BEng(KMITL)	Thermal System Design
16.Mr.Unnut Phinsopon	Lecturer	22	BEng(KMITL)	Control Engineering
17.Mr.Sunpasit Limnorarattana	Lecturer	28	BEng(KMITL), M.Sc. (Melbourne)	Industrial Engineering
18.Mr.Monsak Pimsarn	Lecturer	24	BEng(KMITL)	Machine Design
19.Dr.Yothin Prempraneerach	Head of Dept. Associate Professor	47	BEng(KMITL), MSEE, DEng (Nihon)	Mechatronics
20.Mr.Vipan Prijapanij	Associate Professor	49	BSc(Hons), ACGI, MSc (Cantab)	Control Theory
21.Dr.Jongkol Ngamwiwit	Assistant Professor	45	BEng(KMITL), MEng, DEng (Tokai Univ.)	Modern Control

Appendix 7

7-1. Curriculum (Telecommunications)

Subject	Credit (Lecture-Practice)	Revised/Set-up Academic Year	Remarks
1st year			
(1st semester)			
- Engineering Laboratory I	1(0-3)	1989	Physics Lab. I in the old curriculum
- Electrical Circuit Analysis	3(0-3)		
- Mechanics	3(3-0)		
- Mathematics I	6(6-0)		
- Language(English/Japanese)	3(2-2)	1989	new
- 2 Electives of Humanity	4(4-0)	1989	new

20(18-5)			
(2nd semester)			
- Electromagnetics	3(3-0)		
- Engineering Laboratory II	1(0-3)	1989	Physics Lab. II in the old curriculum
- Quantum Physics	2(2-0)		
- Thermodynamics	3(3-0)	1989	
- Engineering Drawing	1(1-2)	1989	Combining Eng. Drawing I, II in the old curriculum
- Introduction to Computer Science	2(2-0)	1989	new
- Digital Circuit & Logic Design	3(3-0)		
- Mathematics II	3(3-0)		
- Language(English/Japanese)	3(2-2)	1989	new

21(19-7)			
2nd Year			
(1st semester)			
- Engineering Laboratory III	1(0-3)		
- Microprocessor & Microcomputer	3(3-0)	1990	new
- Principle of Computer Programming	2(2-0)	1990	Programming Language I, II in 1st & 2nd semester of 1st year in the old curriculum
- Solid and Fluid Mechanics	3(3-0)	1990	new
- Material Science	3(3-0)	1990	new
- Mathematics III	3(3-0)		
- 2 Electives from under	6(6-0)	1990	new
•Fundamental of Electrical Machines			

Subject	Credit (Lecture-Practice)	Revised/Set-up Academic Year	Remarks
•Fundamental of Electronics •Fundamental of Civil Engineering •Hydraulics			

21(18-3)			
(2nd semester)			
- Engineering Electromagnetics	3(3-0)	1990	1st semester of 2nd year in the old curriculum
- Network Theory	3(3-0)	1990	--- ditto ---
- Communication engineering	3(3-0)		new textbook in 1992
- Outside Plant Engineering	3(3-0)	1990	divided from Multiplex Sys. and Outside Plant in the old curriculum
- Electronic Engineering	3(3-0)		Engineering Electronics I,II in the old curriculum
- System and Control Engineering	3(3-0)	1990	new

18(18-0)			
3rd Year			
(1st semester)			
- Microwave Engineering	3(3-0)	1991	Introduction to radio & Microwave Engineering in the old curriculum
- Telex and Telephone Engineering	3(3-0)	1991	combining Introduction to Telephone & Telegraphs and Telephone & Telegraph Engineering
- Communication Networks and Transmission Lines	3(3-0)		
- Radio Wave Propagation	3(3-0)		
- Telecommunication Lab. I	3(3-0)	1991	revised
- Microprocessor Application	3(3-0)		
- Electives in Humanity	2(2-0)		

19(17-6)			
(2nd semester)			
- Microwave Communication	3(3-0)		revised, new textbook
- Digital Switching System	3(3-0)	1991	new, new textbook
- Digital Signal Transmission System	3(3-0)		revising Multiplex System & Outside Plant, new textbook

Subject	Credit (Lecture-Practice)	Revised/Set-up Academic Year	Remarks
- Antenna Engineering	3(3-0)	1991	new
- Radio Engineering	3(3-0)	1991	divided from Introduction to Radio & Microwave
- Telecommunication Lab. II	2(0-6)		revised
- Industrial Training	1		2nd year-2nd semester in the old curriculum

18(15-6)

4th Year

(1st semester)

- 3 Engineering electives	9(9-0)	1992	4 Engineering Electives in the old curriculum
- 1 Free Electives	3(3-0)	1992	new
- Project I	3(0-9)		
- Electives in Social Science	2(2-0)		

17(14-9)

(2nd semester)

- 2 Engineering Electives	6(6-0)	1992	4 Engineering Electives in the old curriculum
- Project II	3(0-9)		
- 2 Electives in Social Science	4(4-0)	1992	1 Electives in the old curriculum

13(10-9)

<Engineering Electives>

- Antenna Design	3(3-0)		
- Telephone Network Planning and Design	3(3-0)	1992	title is changed, improved new textbook
- Microwave Theory and Techniques	3(3-0)		
- Satellite Communication	3(3-0)	1990	revised, new textbook
- Optical Communication	3(3-0)	1990	revised, new textbook
- Data Communication	3(3-0)	1992	revised, new textbook
- Statistical Communication	3(3-0)	1992	revised, new textbook
- Telecommunication Circuit Design	3(3-0)		
- Television Receivers	3(3-0)		
- Television Broadcasting	3(3-0)		

Subject	Credit (Lecture-Practice)	Revised/Set-up Academic Year	Remarks
<Engineering Electives>			
- Radar and Radio Navigation Aides	3(3-0)	1990	new textbook
- Principles of Network Design	3(3-0)		
- Transmission Engineering	3(3-0)		
- Broadcasting Engineering	3(3-0)		
- Digital Communication System	3(3-0)		
- Computer in Communication	3(3-0)	1992	revised
- Mobile telecommunication	3(3-0)		
- Modern Local Communication Architecture	3(3-0)	1991	new textbook
- DSP Based Testing	3(3-0)	1991	new
- Electrical Noise on Communication and Electronic System	3(3-0)	1991	new
- MOS VLSI Circuit for Telecommunications	3(3-0)	1991	new
- Design of Arithmetic Units DSP	3(3-0)	1991	new
- Fast Algorithm for DSP	3(3-0)	1991	new

7-2. Curriculum (Broadcasting)

Subject	Credit (Lecture-Practice)	Revised/Set up Academic Year	Remarks
<Telecommunication, Regular Course>			
1st Year			
(1st Semester)			
Electromagnetics	3(3-0)		
Electronic Laboratory I	2(0-6)		
Radio Communications	3(3-0)	1989/1991	1/3
Fundamental of Television Engineering	3(3-0)	1989	1
Feedback Control System	3(3-0)	1989	1
English	2(2-0)		
Engineering Mathematics	2(2-1)		
Elective in Humanities	2(2-0)		
total	20(18-7)		
(2nd Semester)			
Microwave Communication System	3(3-0)	1989	1
Electronic Laboratory II	2(0-6)		
Principles of Communications	3(3-0)	1989	1
Electronic Circuit Design	3(3-0)	1989/1990	1/3
Computer Technology	3(3-0)	1989	1
Engineering Analysis	2(2-0)		
Technical English	2(2-1)		
Elective in Humanities	2(2-0)		
total	20(18-7)		
2nd Year			
(1st Semester)			
Electronic Communications	3(3-0)	1989/1991	1/3
Microcomputer Laboratory	2(0-6)	1991	4
Antenna and Radio Wave Propagation	3(3-0)	1989	1
Advanced Electronics	3(3-0)	1989	1
Data Communications	3(3-0)	1989	1
Project I	3(0-9)	1989	4
Engineering Elective	3(3-0)		
Elective in Social Science	2(2-0)		
total	22(17-15)		
(2nd Semester)			
Telecommunications Engineering Laboratory III	2(0-6)	1990	4
Project II	3(0-9)	1989	4
Engineering Elective	3(3-0)		
Engineering Elective	3(3-0)		

Engineering Elective	3(3-0)		
Elective in Social Science	2(2-0)		
Free Elective	3(3-0)		

total	19(14-15)		
grand total	81		

(Engineering Electives)

Remote Sensing Theory	3(3-0)		
Communication Networks & Transmission Lines	3(3-0)	1989	2
Electrical Engineering	3(3-0)		
Color Television Receiver	3(3-0)	1989	2
Telephone Technology	3(3-0)	1989	2
Television Transmitter	3(3-0)	1989	2
Television Control and System	3(3-0)	1989	2
Computer Language	3(3-0)		
Optical Fiber Communication	3(3-0)	1989	2
Satellite Communications	3(3-0)	1989	2
Statistical Communications	3(3-0)		

<Electronics, Regular Course>

1st Year

(1st Semester)

Electromagnetics	3(3-0)		
Semiconductor Devices	3(3-0)		
Electronic Circuits	3(3-0)	1989/1990	3/3
Electronic Laboratory I	2(0-6)		
Digital and Logic Circuit Design	3(3-0)		
English	2(2-1)		
Engineering Mathematics	2(2-0)		
Elective in Humanities	2(2-0)		

total	20(18-7)		
-------	----------	--	--

(2nd Semester)

Digital Electronics	3(3-0)		
Introduction to Microprocessor	3(3-0)	1990	3
Electronic Communications	3(3-0)	1991	3
Electronic Laboratory II	2(0-6)		
Microcomputer Laboratory	2(0-6)	1991	4
Computer Engineering	3(3-0)		
Engineering Analysis	2(2-0)		
Technical English	2(2-0)		

total	20(16-15)		
-------	-----------	--	--

2nd Year			
(1st Semester)			
Power Electronics	3(3-0)		
Electronic Circuit Design	3(3-0)	1990	3
Project I (Electronics)	3(0-9)	1989	4
Electronic Laboratory III	2(0-6)	1990	4
Applied Thermofluids	3(3-0)		
Control Engineering	3(3-0)		
Industrial Administration	2(2-0)		
Elective in Social Science	2(2-0)		
total		21(16-15)	

(2nd Semester)			
Project II (Electronics)	3(0-9)	1989	4
Quality Control	3(3-0)		
Industrial Economics	2(2-0)		
Engineering Elective	3(3-0)		
Engineering Elective	3(3-0)		
Engineering Elective	3(3-0)		
Engineering Elective	3(3-0)		
total		20(17-9)	
grand total		81	

(Engineering Electives)	
Electronic Instrumentation	3(3-0)
Electrical Engineering	3(3-0)
Noise Reduction in Electronic System	3(3-0)
Television Engineering	3(3-0)
Broadcasting Engineering	3(3-0)
Microwave Communication System	3(3-0)
Applied Microprocessor	3(3-0)
Optoelectronics	3(3-0)
Remote Sensing Theory	3(3-0)
Design with Integrated Circuits	3(3-0)
Network Theory	3(3-0)
Solid State Motor Control	3(3-0)
Bio-Medical Electronics	3(3-0)
Radio Wave Propagation	3(3-0)
Antenna Engineering	3(3-0)
Computer Language	3(3-0)

- Remarks(1) 1: set up (compulsory).
 2: set up (elective).
 3: using new textbooks written by instructor(staff of the department).
 4: Introducing new equipment in laboratories.
- (2) Part-time course is three year course and the curriculum is the same as the regular course.

7-3. Curriculum (Data Communication)

Curriculum for Master of Science ‡
 Program in Computer Science and Information Technology

Subject	Credit(Lecture-Practice)	Revised/Set up Academic Year	Remarks
1st year			
(1st semester)			
Research I	-(0-6)	1990	
Computer Organization	3(3-0)	1990	
Algorithms and Programming Technique	3(3-0)	1990	
Elective in Advance Mathematics	3(3-0)	1990	
Computer and Information Elective	3(3-0)	1990	
Total		12(12-6)	
(2nd semester)			
Research II	-(0-6)	1990	
Seminar I	1(0-3)	1990	
Data Structure and File Organization	3(3-0)	1990	
Database Management System	3(3-0)	1990	
Information Resource Management	3(3-0)	1990	
Computer and Information Elective	3(3-0)	1990	
Total		13(12-9)	
2nd year			
(1st semester)			
Research III	-(0-6)	1990	
Seminar II	1(0-3)	1990	
Information System Analysis and Design	3(3-0)	1990	
Computer and Information Elective	3(3-0)	1990	
Computer and Information Elective	3(3-0)	1990	
Total		10(9-9)	
(2nd semester)			
Master Thesis	12(0-6)	1990	
Computer and Information Elective	3(3-0)	1990	
Total		15(3-6)	

Electives in Advance Mathematics :-

Discrete Mathematics
Mathematical Logic
Numerical Analysis
Queuing Theory and Applications
Optimization Techniques
Matrix Analysis
Non-Linear Programming

Computer and Information Electives:-

Information Concepts in Organizations
Management Information System Policy
Operational Management
Data Communications and Computer Network
Software Engineering
Operating System
Modeling and Decision Support System
Logic
Computer Applications in Business
Office Automation Systems
Computer System Performance Evaluation
Digital Image Processing
Remotely Sensed Data Processing
Pattern Processing and Recognition
Interactive Computer Graphics
Artificial Intelligence
Computational Linguistics
Knowledge Base Systems
Automation and Finite State Machine
Selected Topics in Computer and Information Science
Advance Topics in Computer and Information Science
Information System Development Project

BASIC Programming
FOTRAN Programming
COBOL Programming
PLI & RPG Programming
Digital # Computer Structures

* This new curriculum was set up in 1990 in order to provide the new program with pioneering and well-balanced curriculum.

Curriculum *
Bachelor of Engineering (Part-time Course)

Subject	Credit(Lecture-Practice)	Revised/Set up Academic Year	Remarks
1st year			
(1st semester)			
Engineering Mathematics	3(3-0)	1992	
English I	2(2-1)	1992	
Electromagnetics	3(3-0)	1992	
Electronic Engineering	3(3-0)	1992	
Data Structure	2(2-1)	1992	
Principles of Computer Programming	2(0-2)	1992	
Total		15(13-4)	
(2nd semester)			
Engineering Mathematics II	3(3-0)	1992	
Techniques English	2(2-1)	1992	
Switching Theory	3(3-0)	1992	
Microprocessor Interfacing	3(3-0)	1992	
Computer Laboratory II	2(0-2)	1992	
Computer Organization Architecture	3(3-0)	1992	
Total		16(14-3)	
2nd year			
(1st semester)			
Computer Project I	2(0-6)	1992	
Computer Engineering Laboratory III	2(0-6)	1992	
Assembly Language and System Programming	3(3-0)	1992	
Information System Analysis and Design	3(3-0)	1992	
Compiler Network	3(3-0)	1992	
Elective in Humanities	2(2-0)	1992	
Total		15(11-12)	

Subject	Credit(Lecture-Practice)	Revised/Set up Academic Year	Remarks
(2nd semester)			
Computer Project II	2(0-6)	1992	
Operating System	3(3-0)	1992	
Compiler Construction	3(3-0)	1992	
Database Systems	3(3-0)	1992	
Artificial Intelligence	3(3-0)	1992	
Total		14(12-6)	
3rd year			
(1st semester)			
Project I	3(0-9)	1992	
Engineering Elective	3(3-0)	1992	
Engineering Elective	3(3-0)	1992	
Elective in Social Science	3(3-0)	1992	
Total		11(8-9)	
(2nd semester)			
Project II	3(3-0)	1992	
Engineering Electives	3(3-0)	1992	
Engineering Electives	3(3-0)	1992	
Engineering Electives	3(3-0)	1992	
Electives in Social Sciences	2(2-0)	1992	
Total		14(11-3)	

Remarks: † = This part-time course was set up in 1992 in order to increase manpower in engineering

Curriculum
Bachelor of Engineering (Regular Course)

Subject	Credit(Lecture-Practice)	Revised/Set up Academic Year	Remarks
1st year			
(1st semester)			
Engineering Laboratory I	1(0-3)	1990	Old title "Physic Laboratory"
Electrical Circuit Analysis	3(3-0)		
Mechanics	3(3-0)		
Mathematics I	6(6-0)		
Elective in languages	3(2-2)		
Elective in Humanity	2(2-0)		
Elective in Humanity	2(2-0)		
Total		20(18-5)	
(2nd semester)			
Electromagnetics	3(3-0)		
Engineering Laboratory II	1(0-3)	1990	Old title "Physics Laboratory II"
Quantum Physics	2(2-0)		
Thermodynamics	3(3-0)		
Engineering Drawing	1(1-2)		
Introduction to Computer Science	2(2-0)	1990	Old title "Programming Laboratory II"
Digital Circuit and Logic Design	3(3-0)		
Mathematics II	3(3-0)		
Elective in Languages	3(2-2)		
Total		21(19-7)	
2nd year			
(1st semester)			
Engineering Laboratory III	1(0-3)	1990	Old title "Engineering Laboratory I"
Microprocessor and Microcomputer	3(3-0)	1990	Old title "Digital Logic Design and Microprocessor I"

Subject	Credit(Lecture-Practice)	Revised/Set up Academic Year	Remarks
Principles of Computer Programming	2(2-0)	1990	Old title "Programming Language II"
Mathematics III	3(3-0)		
Material Sciences	3(3-0)	1990	New
Solid and Fluid Mechanics	3(3-0)	1990	New
Fundamental of Electrical Machines	3(3-0)	1990	Merge "Electronics Machine I" and "Electronical Machine II"
Fundamental of Electronics	3(3-0)	1990	Merge "Electronics Engineering I" and Electronic Engineering II"
Total		21(20-3)	
(2nd semester)			
Data Structures and Algorithms	3(3-0)	1990	New
Switching Theory	3(3-0)	1990	Transfer from 3 years 2-semester
Microprocessor Interfacing	3(3-0)	1990	Old title "Digital Logic Designing and Microprocessor II"
Computer Organization & Architecture	3(3-0)	1990	Old title "Computer System"
Computer Laboratory I	2(0-6)	1990	Old title "Engineering Laboratory I" and Engineering Laboratory II" (Computer)
Measurement and Instrumentation	3(3-0)	1990	New
System and Control Engineering	3(3-0)	1990	Old title "Feed back control"
Total		20(18-16)	
3rd year			
(1st semester)			
Computer Project I	2(0-6)	1990	New
Computer Laboratory II	2(0-6)	1990	Old title "Computer Laboratory I"

Subject	Credit(Lecture-Practice)	Revised/Set up Academic Year	Remarks
Assembly Language and System Programming	3(3-0)	1990	Old title "Assembly Language"
Information System Analysis and Design	3(3-0)		
Communication Engineering	3(3-0)	1990	Merge "Principle of Communication" and Communication Engineering"
Computer Engineering Mathematics	3(3-0)	1990	Old title "Applied Statistics"
Elective in Humanity	2(2-0)		
Total		18(14-12)	
(2nd semester)			
Computer Project II	2(0-6)	1990	New
Computer Laboratory III	2(0-6)	1990	Old title "Computer Laboratory II"
Computer Network	3(3-0)	1990	New
Operating System I	3(3-0)	1990	Old title "Operating Systems"
Compiler Construction	3(3-0)	1990	Transfer "Computers" (Elective) to Core
Database Systems	3(3-0)	1990	Transfer "Data Management and Database (Elective) to Core
Artificial Intelligence	3(3-0)	1990	New
Total		19(15-12)	
(Summer Semester)			
Industrial Training	1(0-320)	1990	Transfer from 2nd year
Total		1(0-320)	
4th year			
(1st semester)			
Project I	3(0-9)		
Engineering Electives	3(3-0)	1990	Decrease 4 Electives to 3 Electives
Engineering Electives	3(3-0)	1990	

Subject	Credit(Lecture-Practice)	Revised/Set up Academic Year	Remarks
Engineering Electives	3(3-0)	1990	*
Elective in Social Science	2(2-0)		
Total		14(11-9)	
(2nd semester)			
Project II	3(0-9)		
Engineering Electives	3(3-0)	1990	Decrease 4 Electives
Engineering Electives	3(3-0)	1990	to 3 Electives
Engineering Electives	3(3-0)	1990	
Elective in Social Science	2(2-0)	1990	Increase 1 Electives
Elective in Social Science	2(2-0)	1990	to 2 Electives
Total		16(13-9)	

*

Engineering Electives:-

Expert Systems
Operation Research
Pattern Recognition
Voice Recognitions
Image Processing
Computer Graphics
Basic VLSI Design
Computer Aided Design and Manufacturing
Software Engineering
Remote Sensing
Digital Signal Processing
Management Information Systems
Office Automation
Computer Crime and Counter Measurement
Computer Center Management
Robotic Engineering
Network Systems Programming
System Software Environment
Operating Systems II
Computer Language Concepts
Microcomputer Applications
Selected Topics in Computer Communications
Selected Topics in Information Technology
Selected Topics in Operating Systems
Selected Topics in Management Information Systems
Selected Topics in Hardware Technology
Selected Topics in Software Design
Advanced Microprocessor

* Contents of Engineering Elective subjects have been revised year by year. In Selected Topics, new topics are included to fit new technology.

7-4. Curriculum (Mechanical Engineering)

Subject	Credit(Lecture-Practice)	Revised/Set up Academic Year	Remarks
1st Year			
(1st semester)			
Elective in Language	3(2-2)		
Elective in Humanities	2(2-0)		
Elective in Humanities	2(2-0)		
Engineering Laboratory I	1(0-3)		
Electrical Circuit Analysis	3(3-0)		
Mechanics	3(3-0)		
Mathematics I	6(6-0)		
Total	20(18-5)		
(2nd semester)			
Elective in Language	3(2-2)		
Electromagnetics	3(3-0)		
Engineering Laboratory II	1(0-3)		
Quantum Physics	2(2-0)		
Thermodynamics	3(3-0)		
Engineering Drawing	1(1-2)		
Introduction to Computer	2(2-0)		
Design of Digital and Logic Circuit	3(3-0)		
Mathematics II	3(3-0)		
Total	21(19-7)		
2nd Year			
(1st semester)			
Engineering Laboratory III	1(0-3)		
Fundamentals of Electrical Machines	3(3-0)		
Introduction to Electronics	3(3-0)		
Solid and Fluid Mechanics	3(3-0)		
Material Science	3(3-0)		
Principle of Computer Programming	3(3-0)		

Subject	Credit(Lecture-Practice)	Revised/Set up Academic Year	Remarks
Microprocessor and Microcomputer	2(2-0)		
Mathematics III	3(3-0)		
<hr/>			
Total	21(20-3)		
(2nd semester)			
Solid Mechanics	3(3-0)		
Fluid Mechanics	3(3-0)		
Engineering Thermo- dynamics	3(3-0)		
System and Control Engineering	3(3-0)		
Measurement and Instrumentation	3(3-0)	1989	1
Manufacturing Process	3(3-0)	1989	2
Mechanical Workshop	2(0-6)		
<hr/>			
Total	20(18-6)		
3rd Year			
(1st semester)			
Elective in Humanities	2(2-0)		
Numerical Analysis I	2(2-1)	1989	3
Machine Design	3(3-0)	1989	4
Mechanics of Machinery	3(3-0)		
Mechanical Vibration	3(3-0)		
Heat Transfer	3(3-0)		
Mechanical Drawing	2(1-3)	1989	5
Mechanical Engineering Laboratory I	1(0-3)	1989	6
<hr/>			
Total	19(17-7)		
(2nd semester)			
Numerical Analysis II	2(2-1)	1989	7
Machine Design II	3(2-3)	1989	8
Turbomachines	3(3-0)		
Internal Combustion Engines	3(3-0)	1989	9
Mechanical Engineering Laboratory II	1(0-3)	1989	10
Elective in Engineering	3(3-0)		
<hr/>			
Total	15(13-7)		

Subject	Credit(Lecture-Practice)	Revised/Set up Academic Year	Remarks
(Summer semester)			
Industrial Training	1(240 hrs.)		

4th Year			
(1st semester)			
Project I	3(0-9)		
Refrigeration and Air Conditioning	3(3-0)		
Elective in Engineering	3(3-0)		
Elective in Engineering	3(3-0)		
Elective in Social Sciences	2(2-0)		

Total	17(14-9)		
(2nd semester)			
Project II	3(0-9)		
Power Plant Engineering	3(3-0)		
Elective in Engineering	3(3-0)		
Elective in Engineering	3(3-0)		
Elective in Social Sciences	2(2-0)		
Elective in Social Sciences	2(2-0)		

Total	16(13-9)		

- Remarks
- 1: Included high precision measurement technique and change lecture hour from two hours to three hours.
 - 2: Metal forming and metal casting processes for foundry industry are included.
 - 3: Change number of credits from 3 credit to 2 credit.
 - 4: Included power screw, lead screw and ball screws and its applications
 - 5: This is a new set up course which include machine drawing, detail and assembly drawing of mechanical systems.
 - 6: This is a new set up course which include the basic mechanical engineering experiments in the field of thermodynamics, fluid, mechanics, heat transfer, material and vibration.
 - 7: Change number of credit from 3 credit to 2 credit and include the basic fundamental of finite element method.
 - 8: Included computer aided design and practical design assignment.
 - 9: Included the new modern techniques on exhaust gas analysis engine performance test measurement and engine modification.
 - 10: This is a new set up course which include the basic mechanical engineering experiment in ICE CNC-machine control and simulation, etc.

Appendix 8

8-1. Textbooks Published by JICA Support (Telecommunications)

Title	Author	Published year	Course to be used (year/semester)
1. Optical Fiber Cable Measurement	Mr.Apinun	1989	Telecommunication Lab. I, II (3 / 1, 2)
2. Optical Fiber Cable Splicing & Measurement	Mr.Kemthong	1989	Telecom. Lab. II (3 / 2)
3. Satellite Communication	Mr.Narong	1989	Satellite Communication (4 / 2)
4. Telex & Faximile	Mr.Sukon	1989	Telex & Telephone Engineering (3 / 2)
5. Marine Rader	Mr.Apinun	1989	Radar & Radio Navigation Aids (4 / 2)
6. Electromagnetics	Mr.Narong	1989	Engineering Electromagnetics (2 / 2)
7. Digital Microwave Measurement	Mr.Narong	1989	Telecom. Lab. I,II (3 / 1,2)
8. Radio & Cable Transmission Laboratory Guidebook	Staff	1989	Telecom. Lab. I,II (3 / 1,2)
9. Digital Microwave Radio System	Mr.Narong	1989	Microwave Communication (3 / 2)

10. Optical Fiber Communication Theory(1)	Mr.Apinun	1990	Optical Communication (4 / 1)
11. Digital Transmission Technology	Mr.Tawil K.	1990	Digital Signal Transmission Sys. (3 / 2)
12. 2M PCM MUX Measurement	Mr.Tawil K.	1990	Telecom. Lab. I,II (3 / 1,2)
13. 8M Digital MUX Equipment & 8M Optical Line Terminating Equipment & Measurement	Mr.Tawil K.	1990	Telecom. Lab. I,II (3 / 1,2)

14. Outside Plant Engineering	Mr.Kemthong	1991	Outside Plant Engineering (2 / 2)
15. Telecommunications Circuit Design	Mr.Tawil P.	1991	Telecommunications Circuit design (4 / 2)
16. Outside Plant Laboratory Guidebook	Mr.Kemthong	1991	Telecom. Lab. I (3 / 1)
17. Communication Systems	Dr.Wiwat	1991	Communication Engineering (2 / 2)
18. Electromagnetics	Mr.Monai	1991	Electromagnetics (for other Dept.)
19. High-speed Local Area Network Architecture	Mr.Suvipol	1991	Modern Local Communication Network Architecture (4 / 1)
20. Optical Fiber Communication Theory(2)	Mr.Apinun	1991	Optical Communication (4 / 1)

Title	Author	Published year	Course Name to be used (year/semester)
21.Communication Theory	Mr.Tawil K.	1991	Communication Theory (for other Dept.)
22.Digital PABX Laboratory Guidebook	Mr.Tawil P.	1991	Telecom. Lab. II (3 / 2)
23.Statistical Communication	Dr.Kobchai	1991	Statistical Communication (4 / 2)

24.Digital Switching Technology	Mr.Tawil P.	1991	Digital Switching System (3 / 2)
25.Optical Device	Mr.Apinun	1992	Optical Communication (4 / 1)
26.ISDN Protocol Technology & Laboratory Guidebook	Mr.Tawil P.	1992	Computer in Communication (4 / 1)
27.Introduction of ISDN Technology	Mr.Tawil P.	1992	Computer in Communication (4 / 1)
28.Digital PABX	Mr.Tawil P.	1992	Digital Switching System (3 / 2)
29.Digital Microwave Communication Engineering	Mr.Narong	1992	Microwave Communication (3 / 2)
30.Telecommunications Network Planning	Mr.Manoon	1992	Telecommunications Network Planning & Design (4 / 1)
31.Optical Fiber Communication Laboratory Guidebook	Mr.Apinun	1992	Telecom. Lab. I,II (3 / 1,2)
32.Principles of Data Communication	Mr.Pramote/ Dr,Wiwat	1992	Data Communication (4 / 2)
33.Data Communication System	Dr.Wiwat	1992	Data Communication (4 / 2)
34.Q & A in Optical Fiber Technology	Mr.Apinun	1992	Optical Communication (4 / 1)
35.Radio Engineering	Mrs.Nipa	1992	Radio Engineering (3 / 2)

8-2. Textbooks Published by JICA Support (Broadcasting)

Title	Author	Published Year	Course to be used (Year/Semester)
1. Textbook of Color Television Engineering	Dr. Tawat M. Mr. Sawamura Y. Mr. Tamura Y. and others	1989	Fundamental of Television (1/1, E/D) (1/2, E/P)
2. Basic Electronics	Mr. Nikorn S.	1989	Electronic Circuits (1/1, E/D) (1/2, E/P)
3. Introduction to Microprocessor (Z-80)	Mr. Attasit L.	1990	Introduction to Microprocessor (1/1, E/D) (1/2, E/P) Microcomputer Laboratory (2/1, T/D) (2/1, T/P) (2/2, E/D) (2/1, E/P)
4. Electronic Circuits Design	Mr. Nikorn S.	1990	Electronic Circuits Design (2/1, E/D) (2/1, T/D) (2/1, E/P) (1/2, T/D)
5. Problems and Solutions in Electronics	Mr. Nikorn S.	1990	Electronic Circuits Design ditto
6. Video Test Signal	Dr. Kanok J.	1990	Electronic Communications (2/1, E/D) (2/1, T/D) (2/1, E/P) (2/2, T/P)
7. Radio and Television Transmitter	Mr. Pradit V.	1991	Radio Communications (1/1, T/D) (1/1, T/P)
8. Fundamental of HDTV (HDTV Part 1)	Mr. Vichai S.	1992	Fundamental of Television Engineering
9. Principles of HDTV System (HDTV Part 2)	Mr. Uthai S.	1992	Fundamental of Television Engineering
10. Electronic Circuit Design II	Mr. Nikorn S.	1992	Electronic Circuits Design

Remarks: T: Telecommunications course
E: Electronics
D: Daytime (Regular)
P: Part-time

8-3. Textbooks Published by JICA Support (Data Communication)

Title	Author	Published	Course to be used (Year/ Semester)
1. ACOS-4/MVP Handbook	Dr.Kittima Mekhabunchakij	1990	Seminar in CRSC
2. COBOL/Structure Language Programming	Dr.Kittima Mekhabunchakij	1990	Seminar in CRSC
3. Introduction to ACOS-4/ MVP Relational Data Base System	Dr.Kittima Mekhabunchakij	1990	Seminar in CRSC

4. Pattern Recognition Principles	Dr.Chom Kimpan	1992	"Pattern Recognition" (4/1.2)
5. Digital Circuit and Logic Design	Dr.Chom Kimpan	1992	"Digital Circuit and Logic Design" (1/2)
6. Numerical Analysis	Ms.Pakkinee Jimreivat	1992	"Numerical Analysis" (1Y - Master course)
7. Expert Systems	Dr.Kanchit Maitree	1992	"Expert System" (4/1)
8. Operating Systems	Dr.Boontee Kruatrachue	1992	"Operating System" (3/2)
9. Data Structure	Mr.Surasit Vannakrairojn	1992	"Data Structure and File Organization" (1Y - Master course)
10. File Organization	Mr.Surasit Vannakrairojn	1992	"Data Structure and File Organization" (1Y - Master course)

Title	Author	Published Year	Course to be used (Year/ Semester)
11. Computer Aided Design	Mr.Kawin Sonthipermpoon	1992	Training of CAD/CAM Center
12. Theory and Problems of Programming with Pascal	Dr.Chom Kimpan Mr.Kawin Sonthipermpoon	1992	"Theory and Problems of Programming with Pascal" (Tutorial course)
13. Discrete Mathematics	Ms.Pakkinee Jimreivat	1992	"Discrete Mathematics" (Master Course)

8-4. Textbooks Published by JICA Support (Mechanical Engineering)

Title	Author	Published Year	Course to be used (Year/Semester)
1. Basic Solid Mechanics	Mr. Somchai	1990	Solid-Fluid Mechanics (2/2)
2. Advanced Mechanics of Solid	ditto	1990	Solid Mechanics (2/2)
3. Engineering Drawing	Mr. Pornsak	1990	Engineering Drawing (1/2)
4. Mechanics of Machinery	Mr. Somchai	1990	Mechanics of Machinery (2/2)
5. Heat Transfer	Mr. Pongjeit	1990	Heat Transfer (3/2)
6. Principle of Refrigeration	Mr. Akradach	1990	Refrigeration and Air Conditioning (4/1)
7. Air Conditioning Practice	ditto	1990	ditto
8. Manufacturing Process	Mr. Thavee	1990	Manufacturing Process (2/2)
9. Numerical Control	Dr. Jongkol	1990	Numerical Control (4/1)
10. Control Engineering Laboratory	Control Engineering	1990	Control Laboratory (3/1)
11. Engineering Laboratory	ditto	1990	Engineering Laboratory (2/1,2)
12. DC Motors Electronics Control and Servo System	Dr. Yothin	1990	Solid-State Motor Control (4/2)
13. Linear Algebra and State Space Equations	Mr. Viphan	1990	Linear Control System (4/1)
14. Modern System Analysis	Mr. Viphan	1990	Modern System Analysis (4/2)

15. Mechanical Laboratory I	Staff	1991	Engineering Laboratory (3/1)
16. Mechanical Laboratory II	Staff	1991	Engineering Laboratory (3/2)
17. Tool Design	Mr. Thavee	1991	Mechanical Engineering Problem Analysis (4/1)

18. Material Science and Engineering	Mr. Pornsak	1992	Material Science (2/1)

19. Mechanics of Composite Material	Mr. Somchai	1992	Composite Material (4/1,2)
20. Thermodynamics	Mr. Tawatchai	1992	Thermodynamics (1/1)
21. Internal Combustion Engine	Mr. Attason	1992	Internal Combustion Engine (3/2)
22. Basic Lubrication Theory	Dr. Mongkol, Dr. Hashimoto	1992	Lubrication (4/1,2)
23. Advanced Lubrication Theory	Dr. Mongkol, Dr. Hashimoto	1992	Friction Lubrication and Wear (Graduate)
24. Mechanical Design and Drawing	Mr. Thavee, Dr. Iijima, Mr. Chinda	1992	Mechanical Drawing (3/1)
25. Control Systems Engineering	Dr. Jongkol	1992	Control Engineering Systems (3/2)

Appendix 9

9-1. List of Technical Papers (Telecommunications)

9-1-1. Number of Technical Papers Presented

Academic Organization	1988	1989	1990	1991	1992	Total
1. International Journals and/or Proceedings	1 (5%)	2 (10%)	1 (5%)	2 (9%)	2 (9%)	8
2. International Conference Papers	-	-	1 (5%)	4 (18%)	9 (41%)	14
-----	-----	-----	-----	-----	-----	-----
3. Journals and/or Proceedings in Thailand	-	-	2 (10%)	-	4 (18%)	6
4. Conference Papers in Thailand	4 (19%)	7 (33%)	16 (80%)	27 (123%)	14 (64%)	68
Total number of papers	5 (24%)	9 (43%)	20 (100%)	33 (150%)	29 (132%)	96
Number of research staff	21	21	20	22	22	-

Remarks

- Number in the bracket shows (number of papers/number of staff) in %.
- Number of research staff includes the staff abroad.

9-1-2. List of Technical Papers

1988

1. A. Rathie, C. Surawatponya "Software Development for Antenna Characteristics Display" 11st Electrical Engineering Conference, pp. 1-32, 16-17 Dec. 1988.
2. C. Chatreekul, C. Surawatponya, "Measurement and Elimination of RFI from Over Head High Voltage Power Line", *ibid*, pp. 2-2, 16-17 Dec. 1988.
3. W. Kiranon, C. Loecharasaramdee, "Integrator with Extended Time Constant", *ibid*, pp. 5-22, 16-17 Dec. 1988.
4. V. Riewruja, W. Surakamponorn, C. Surawatponya, "Theory and Application of Current Limiting Circuit", *ibid*, pp. 5-23, 16-17 Dec. 1988.
5. W. Surakamponorn, P. Thitimajshima, "Integrable Electronically Tunable Current Conveyors", *IEE Proc. Part G.*, Vol. 135, No.2, pp. 71-77, 1988.

1989

1. W. Kiranon, P. Wardkien, C. Loecharasaramdee, "Simple 4-phase Envelope Detector", 12th Electrical Engineering Conference, pp. 142-151, 16-17 Nov. 1989.
2. K. Panichprathompong, M. Krairiksh, W. Kiranon, "PZN Diode Phase Shifter", *ibid*, pp. 152-161.
3. W. Kiranon, P. Wardkien, C. Loecharasaramdee, "Novel Hilbert Transform Detector", *ibid*, pp. 162-171.
4. M. Krairiksh, W. Kiranon, K. Panichprathompong, "Bandwidth Enhancement of Coaxial Collinear Antenna", *ibid*, pp. 172-181.
5. W. Kiranon, P. Wardkien, C. Loecharasaramdee, "Period-to-Voltage Converter", *ibid*, pp. 604-611.
6. W. Kiranon, P. Wadkien, C. Loecharasaramdee, "Frequency Independent Quadrature Phase Shifter", *ibid*, pp. 612-621.
7. W. Kiranon, P. Wardkien, C. Loecharasaramdee, "OTA Frequency Multiplier", *ibid*, pp. 622-631.
8. C. Surawatponya, K. Saetang, "A Microstrip Waveguide Gunn Oscillator", *Int. J. of Electronics*, vol. 66, 1989.
9. K. Dejhan, *IEEE Trans. Consumer Electronics*, vol. 35, no. 4, Nov. 1989.

1990

1. M. Krairiksh, T. Wakabayashi, W. Kiranon, "Analysis of Interior Electromagnetics Fields from a Slot on a Perfectly Conducting Sphere", *Proc. of the 3rd Asia-Pacific Microwave Conference*, Tokyo, Japan, pp. 1182-1186, Sept. 18-21, 1990.
2. M. Krairiksh, K. Panishpathompong, S. Damanop, A. Jaidee, "Magnetron Power Control for Microwave Heating", *The Conference of the Engineering Institute of Thailand*, Nov. 1-4, 1990.
3. K. Nimsiri, "Low-loss Splicing Technique for Optical Fiber", *the Conference of the Engineering Institute of Thailand*, Nov. 1-4, 1990.
4. K. Dejhan, C. Nokyoo, S. Junnapiya, "Multi-purpose Open-drying", *Proc. of the 5th Technology for Developing Country*, pp. 1-37-144, Khonkaen University, Khonkean, August 16-17, 1990.
5. K. Dejhan, W. Surakamponorn, "VLSI Designs", *Proc. of the 16th Conference on Science and Technology of Thailand*, Oct. 25-27, 1990.

6. W. Surakamponorn, V. Riewruja, K. Dejhan, K. Kumwasha, "CMOS Current Conveyor", The 13th Electrical Engineering Conference, Chienmai University, Chienmai, Nov. 8-9, 1990.
7. T. Trisuwannawat, F. Cheevasuvit and K. Dejhan, "Band-stop Recursive Digital Filter with Maximally Flat Magnitude and Group Delay", *ibid.*
8. P. Sanaolump, P. Buntra, T. Paungma, "Construction of a Mixed Variable Signal Generator", *ibid.*
9. P. Sanaolump, P. Buntra, T. Paungma, "Telephone Controlling System", *ibid.*
10. P. Sanaolump, P. Buntra, T. Paungma, "Studies of Optical Path for PABX", *ibid.*
11. W. Kiranon, P. Wardkien, J. Lertjarataramdee, "A New Analog Divider Circuit", *ibid.*
12. W. Kiranon, N. Kamprasert, "A Simple Capacity Measurement", *ibid.*
13. W. Kiranon, P. Wardkien, J. Lertjarataramdee, "A Simple Difference-phase Measurement Using Integrator Circuit", *ibid.*
14. W. Kiranon, P. Wardkien, J. Lertjarataramdee, "A New Logarithmic Amplifier", *ibid.*
15. W. Kiranon, P. Wardkien, J. Lertjarataramdee, "A New frequency to Voltage Converter Circuit", *ibid.*
16. W. Kiranon, N. Kamprasert, "Calculation of Characteristic Impedences of Micro-strip Line Using Field Chart", *ibid.*
17. A. Surasit, M. Krairiksh, J. Lertjarataramdee, "Analysis of Yagi-dipole Fixing the Distribution of Two Current-term", *ibid.*
18. K. Dejhan et al., "Design of a Low-power 32k CMOS Programmable Delay Line Memory", *IEEE J. Solid-state Circuits*, vol. 25, no.1, Feb., 1990.
19. T. Paungma, P. Buntra, "Development of Rainfall Intensity Recorder for Thailand", *Engineering Journal, Engineering Institute of Thailand*, vol. 43, 1990.
20. T. Paungma, P. Buntra, "Development of Rainfall Intensity Recorder for Thailand", *Thailand Engineering Journal, The Engineering Institute of Thailand*, pp. 73-76, vol.2 no. 43, 1990.

1991

1. W. Thongtun, K. Dejhan, S. Junnapiya, "A New Design Technique for Addressable Fire Detector", *Proc. of the 29th Kasetsart University Annual Conference*, pp. 701-708, 4-7 Feb. 1991.
2. M. Krairiksh, K. Panichpathompong, "Interior Fields of Slot on Sphere", pp. 687-699, *ibid.*
3. P. Sanaolump, P. Buntra, T. Paungma, "To Record the Data of the Amount of a High Accuracy the Moment Rain Fall due to the Time by a Microcomputer", *Proc. of Electrotechnology '91, Engineering Institute of Thailand*, pp. 107-116, 13-26 May 1991
4. P. Buntra, P. Sanaolump, T. Paungma, "Body Check Signal Transmitter and Receiver System Via Telephone Network", pp. 264-273, *ibid.*
5. W. Kiranon, P. Wardkien, "A Volt Meter to DC Meter Adapter", pp. 286-297, *ibid.*
6. S. Thitimutha, K. Dejhan, W. Surakamponorn, S. Junnapiya, S. Nampetch, "A Current Conveyor-Based Integrated Instrumentation Amplifier", pp. 310-317, *ibid.*
7. K. Dejhan, B. Chalermpanich, S. Unnapiya, S. Khuntaweetep, "CMOS VLSI Latch Circuit Optimization Based on $2\mu\text{m}$ Process Gate Length", pp. 318-337, *ibid.*
8. M. Krairiksh; K. Panichpathompong, "Rectangular Planner Phased Array", pp.409-421, *ibid.*
9. W. Thongtun, K. Dejhan, S. Sdangrith, S. Junnapiya, S. Nampetch, "A New Design Technique for Digital Signal Transmission Based on Single Pair Transmission Line without Power Supply at Receiver End", pp. 409-421, *ibid.*
10. W. Surakamponorn, V. Riewruja, K. Kumvachara, K. dejhan, "An Accurate CMOS-Based Current Conveyors", *IEEE Trans. on Instrumentation and Measurement*, Aug., 1991.

11. T. Trisuwannawat, F. Cheevasuvit, K. Dejhan, "A Design Technique of Linear Phase Recursive Digital Filter with Controllable Magnitude at an Arbitrary Specified Frequency", proc. 1991 IEEE Int. Symp. on Circuits and Systems, pp. 2435-2438, Singapore, 11-14 June, 1991.
12. F. Cheevasuvit, K. Dejhan, T. Trisuwannawat, C. Vangviattana, S. Junnapiya, "Boolean Expression for Edge Detection in Binary Images", Proc. ENTECH '91, Engineering Institute of Thailand, 31 Oct.-3 Nov., 1991.
13. T. Puangma, P. Buntra, M. Sukkasem, "Telephone Recording and Signalling", *ibid.*
14. T. Puangma, P. Sanaolump, M. Sukkasem, "Telephony Commander", *ibid.*
15. T. Puangma, I. Arungsrisangchai, Y. Moriya, "Analysis of Effect of Microwave Signal due to Rain at 20 GHz in Thailand", *ibid.*
16. M. Sukkasem, T. Puangma, I. Arungsrisangchai, "Research and Development of Mobile Telephone in Thailand", *ibid.*
17. W. Kiranon, P. Wardkien, "Analog RC Meter", *ibid.*
18. P. Jusereewong, C. Vangwiattana, F. Cheevasuvit, K. Dejhan, "A High-Pass Recursive Digital Filter with Improved Passband Magnitude Response and Remained Maximally Flat Group Delay", *ibid.*
19. M. Krairiksh, T. Wakabayashi, W. Kiranon, "Characteristic of Microwave Applicator Using Slots on a Sphere", Digest of World Congress on Medical Physics and Biomedical Engineering", Kyoto, Japan, pp. 423, 7-12 July, 1991.
20. W. Kiranon, P. Wardkien, C. Loescharataramdee, "Simple Frequency / Voltage Converter with Low Output Ripple", *Electronic Lett*, pp. 205-206, 31 Jan. 1991.
21. F. Cheevasuvit, K. Dejhan, V. Tipsuwanporn, T. Trisuwannawat, "Multispectral Image Segmentation by Applying Graph Theory onto the First Principal Component Image", Proc. of Asian Conf. on Remote Sensing, Singapore, Nov. 1991.
22. J. Ngarmnil, S. Jantarung, F. Cheevasuvit, K. Dejhan, "False Colour Composit Display of Multiband Images on Personal Computer Using Cubic Colour Block Techniques", *ibid.*
23. K. Dejhan, S. Limpaboon, S. Junnapiya, S. Khuntaweethep, "A New Integral Composit of Modified Field-Effect Transistor with Improved Dynamic Performance", The 14th National Electrical Engineering Conference, Prince of Songkla University, 7-8 Nov. 1991.
24. P. Julserivong, F. Cheevasuvit, T. Trisuwannawat, K. Dejhan, "A Maximally Flat Group Delay, Sand-Elimination Recursive Digital Filter with Improved Passband Magnitude Response", *ibid.*
25. S. Sithicheevapak, "New Collision Resolution Algorithm for High Speed Contention Ring Protocol", *ibid.*
26. W. Kiranon, P. Wardkeen, "Integrator with Large Time Constant", *ibid.*
27. T. Matsuura, W. Kiranon, P. Wardkeen, "Handwriter Identification Based on Handwriting Motion", *ibid.*
28. S. Kosalwit, K. Panichpratompom, "Parabolic Cylindrical Antenna for 479-493.5 MHz Cellular Telephone System", *ibid.*
29. K. Vayupak, M. Krairiksh, P. Noiram, S. Kosalwit, "Planner Slot Array Near-Field Analysis", *ibid.*
30. M. Krairiksh, K. Vayupak, S. Kosalwit, P. Noiram, "A Concentric Conducting Spherical Cavity", *ibid.*
31. P. Sanaolump, I. Arungsridangchai, T. Puangma, "Frequency to Voltage Converter for Highly Accurate Rain-Guage Measurement", *ibid.*
32. S. Wilasuan, I. Arungsrisangchai, T. Puangma, "Designation of Cellular Mobile Telephone System", *ibid.*
33. P. Buntra, M. Sukkasem, T. Puangma, "Time Slot Switching Circuit for Integrated Services in DPBX", *ibid.*

1992(as of the end of September)

1. T. Paungma, N. Hemmakorn, Y. Moriya, M. Teramoto, "Scintillation Characteristics as Seen in Ku Band Observed in Bangkok", Proc. of The 13th International Telecommunication Symposium (ITS'92), Taiwan, Feb. 27-29, 1992.
2. Y. Moriya, E. Shibuya, N. Hemmakorn, A. Nyanon, "Method of Measuring Field Intensity of Satellite Signals Determined from Carrier to Noise Ratio", *ibid.*
3. K. Dejhan, F. Cheevasavit, T. Trisuwannawat, M. Kaneko, "An Optimum Dual-mode Transposition Register Array Design for DCT in HDTV Applications", IEEE 1992 Digest of Technical Paper of International Conference of Consumer Electronics, pp. 294-295, Illinois, June 2-4, 1992.
4. K. Dejhan, F. Cheevasavit, T. Trisuwannawat, M. Kaneko, "A Versatile Optimum Dual-mode Transposition Register Array Design for HDTV Applications", to be published in IEEE Trans. on Consumer Electronics.
5. K. Dejhan, F. Cheevasavit, V. Tipsuwanporn, T. Trisuwannawat, "Analog Operation in CMOS Latch Circuit for Reducing Dynamic Power Dissipation", Proc. of the 35th Midwest Symposium on Circuit and Systems, Washington, D.C., Aug. 9-12, 1992.
6. K. Dejhan, F. Cheevasavit, T. trisuwannawat, V. Tipsuwanporn, "A Bipolar Simple Integrable Sinusoidal Oscillator", *ibid.*
7. T. Matsuura, K. Ikeda, W. Kiranon, "Writer Identification Method Based on Impulse Response of Writing Motion System", Proc. of The 2nd Singapore International Conference on Image Processing(ICIP'92), Singapore, Sept. 7-11, 1992.
8. M. Krairiksh, W. Kiranon, T. Wakabayashi, "Microwave Applicator Using Two Slots on Sphere", Proc. of The 1992 Asia-Pacific Microwave Conference(APMC'92), Australia, Aug. 11-13, 1992.
9. F. Cheevasavit, K. Dejhan, T. Tanapanich, D. Lisawadiratanakul, "Cloud Cover and Cloud Shadow Removing Based on 2-dimensional Histogram", Proc. of 13th Asian Conference on Remote Sensing, Ulaanbaatar, Mongolia, Oct. 7-11, 1992.
10. F. Cheevasavit, K. Dejhan, S. Chitwong, "Seam Removal from Colour Mosaicking of MOS-1 MESSAR Images", *ibid.*
11. F. Cheevasavit, K. Dejhan, A. Somboonkaew, "Edge Enhancement Using Transform of Subtracted Smoothing Image", *ibid.*
12. W. Thongtun, K. Dejhan, S. Junnapiya, "A New Design Technique for Addressable Fire Detector", Proc. of NECTEC Journal, June, 1992.
13. J. Chanwutitum, K. Dejhan, W. Leelakiatsakul, "An Application of LOTUS 1-2-3 to Digital Data Logger Processing Technique", to be published in Ladkrabang Engineering Journal, 1992.
14. K. Dejhan, S. Junnapiya, T. Weerakiatsunthorn, "A Design of Latch-based Memory Transposition for VLSI in DCT Application", to be published in Ladkrabang Engineering Journal, 1992.
15. T. Paungma, S. Wilasuwan, "Cell Site Selection and System Design for Cellular Mobile Telephone", Proc. of ENTECH'92, Engineering Institute of Thailand, Nov. 1992.
16. E. Wimonchat, M. Sukkasem, I. Arungsrisangchai, "Analysis of User-Network Interface for ISDN System", *ibid.*

9-2. List of Technical Papers (Broadcasting)

9-2-1. Number of Technical Papers Presented

	1988	1989	1990	1991	1992	Total
International Journal	0	0	0	0	0	0
International Conference Paper	0	1	0	0	1	2
Journal in Thailand	0	0	0	0	0	0
Conference Paper in Thailand	2	1	8	4	2	17
Total Number of Papers	2	2	8	4	3	19
Number of Staffs	7	7	10	12	15	

9-2-2. List of Technical papers
(Including the papers submitted and under preparation)

1988

1. K.Klomkarn and K.Jainchitrapongvej, "Insertion of Teletext Signal on Horizontal Blankng Interval RC Lines", 11th Conference of Electrical Engineering, 16-17 December 1988, Rachamongkol Institute of Technology, Thailand.
2. A.Lasakul, M.Sangworasil, P.Koosirivanichakorn and P.S., "Real Time Video Digitizer" 11th Conference of Electrical Engineering, 16-17 December 1988, Rachamongkol Institute of Tecnology, Thailand.

1989

3. K.Jainchitrapongvej and M.Teramoto, "Realization of an Active Low pass Filter using Uniformly Distributed", IEICE,CAS 89-54-71, 26 October 1989, OSAKA, JAPAN
4. P.Sithiyopasakul, C.Benjangkprasert and K.Jainchitrapongvej, "On the Approximation with Low Pass Filter with Maximally Flat Group Delay", 12th Conference of Electrical Engineering, 24-25 December 1989, Kasetsart University, Thailand.

1990

5. K.Jainchitrapongvej, "The Characterization of the Generalized Bessel Polynomials", 16th Conference on Science and Technlogy of Thailand, 25-27 October 1990, Central Plaza Hotel, Bangkok, Thailand.
6. C.V. and K.Jainchitrapongvej, "Equalization of Luminance to Chrominance Linear", 13th Conference of Electrical Engineering, 8-9 December 1990, Chiang Mai University, Thailand.
7. P.Sithiyopasakul and K.Jainchitrapongvej, "Realization of an Equalizer Using Uniform Distributed RC Circuit", 13th Conference of Electrical Engineering, 8-9 December 1990, Chiang Mai Unversity, Thailand.
8. K.T. and K.Jainchitrapongvej, "On the Approximation of Sine-Squared Pulse by Using Optimization", 13th Conference of Electrical Engineering, 8-9 December 1990, Chaing Mai University, Thailand.
9. A.S., K.Jainchirapongvej and M.Krairiksh, "Analysis of Yagi Dipole Antenna by Using Two Term Current Distribution", 13th Conference of Electrical Engineering, 8-9 December 1990, Chiang Mai University, Thailand.
- 10.A.S., K.Jainchirapongvej and J.Ngamwiwit, "Improve of Pre-Undershoot in Model Reduction Obtained by Aggregation", 13th Conference of Electrical Engineering, 8-9 December 1990, Chaing Mai University, Thailand.

11.C.Benjangkprasert and K.Jainchitrapongvej, "Design of a Second Order Buterworth Type Wave Digital filter", 13th Conference of Electrical Engineering, 8-9 December 1990, Chaing Mai University, Thailand.

12.A.Lasakul, V.S., M.Sangworasil and P.S., "High resolution Color Image Digitizer by Low Access Time Memory Devices", 13th Conference of Electrical Engineering, 8-9 December 1990, Chiang Mai University, Thailand.

1991

13.C.Teekapakvisit and K.Jainchirapongvej, "Realization of an Low Pass Sharp Cut Off Filter by Using Distributed RC Circuit", The Engineering Institute of Thailand, 23-24 May 1991, Asia Hotel, Bangkok, Thailand.

14.K.Jainchirapongvej, "On the Approximation of Line Square Pulse by Using Negative Gradient with Prescribed Poles", 14th Conference of Electrical Engineering, 7-8 December 1991, Prince of Songkla University, Thailand.

15.K.Jainchirapongvej, "Ultrasperical Generalized Bessel Polynomial Low Pass Filter", 14th Conference of Electrical Engineering, 7-8 December 1991, Prince Songkla University, Thailand.

16.K.Jainchirapongvej, "Application of FM Broadcasting for Information Service", 14th Conference of Electrical Enginneering, 7-8 December 1991, Prince Songkla University, Thailand.

1992

17.N.Sukumatanti, J.Jainchitrapongvej and M.Teramoto, "Active High Pass and Band Pass Filter Using Uniformly Distributed RC Lines", JIC-CSCC'92 Conference, 27-28 July 1992 Korea Pusan.

18.D.Sukcharaunpol and K.Jainchitrapongvej, "The Inverse Ultraspherical and Bessel Low Pass Filter", 15th Conference of Electrical Engineering, 3-4 December 1992, KMITT, Thailand.

19.K.Jainchitrapongvej, "An Equalization of Chrominance Signal Amplitude" 15th Conference of Electrical Engineering, 3-4 December 1992, KMITT, Thailand.

9-3. List of Technical Papers (Data Communication)

9-3-1. Number of Technical Papers Presented

Year	1988	1989	1990	1991	1992	Total
International Journals(Including Proc. Tokai Univ.)	1	3	0	1	0	5
International Conference Papers	0	0	0	1	1	2
Journals in Thailand	0	5	6	6	1	18
Conference Papers in Thailand	9	6	4	8	4	31
Total Number of Papers	10 (56%)	14 (78%)	10 (48%)	16 (76%)	6 (24%)	56
Number of Staff	18	18	21	21	25	

* Number in the bracket = (number of papers/number of staff)x100(%)

9-3-2. List of Technical Papers

1988

1. P.Thajchayapong, K.Yamman and A.Khunkitti, "Recursive Digital Filters with Predetermined Group Delay and Chebyshev Stopband Attenuation.," Electronics Letters, Vol. 24, no.25, pp.1547-1549, Dec.1988.
2. P.Thajchayapong, K.Yamman and A.Khunkitti, "X-RAY Computerized Tomography.," Proc.of 11th Conference of Electrical Engineering, 16-17 Dec. 1988
3. P.Thajchayapong, K.Mekhabanchakij and M. Luakjumnian, "Testing for the Edge visibility of General 3D Objects.," Proc. of 11th Conference of Electrical Engineering, 16-17 Dec. 1988.
4. P.Thajchayapong, K.Maitree and V Wittawatkul, "Thai Expert System Shell.," Proc. of 11th Conference of Electrical Engineering, 16-17 Dec. 1988
5. P.Thajchayapong, K.Mekhabanchakij and P.Pakdokeearong, "Program Development of Drawing Convex Object Wireframes.," Proc. of 11th Conference of Electrical Engineering, 16-17 Dec. 1988
6. P.Thajchayapong, K.Maitree and S Sayasatid, "Expert System of Fundamental Chemical Analysis.," Proc. of 11th Conference of Electrical Engineering, 16-17 Dec. 1988
7. P.Thajchayapong, K.Maitree and P.Puajindanate, "Improvement of an Algorithm for Simplification of Remote Sensing Picture.," Proc. of 11th Conference of Electrical Engineering, 16-17 Dec. 1988
8. P.Thajchayapong, K.Maitree and P.Sawangsamut, "English - Thai Machine Translation.," Proc. of 11th Conference of Electrical Engineering, 16-17 Dec. 1988
9. P.Thajchayapong, K.Maitree and S.Tangwaritorn, "Expert System to Diagnosis Common Diseases.," Proc. of 11th Conference of Electrical Engineering, 16-17 Dec. 1988.
10. P.Thajchayapong, W.Supasuteekul and W Lapwattanakit, "A Comparison of Algorithm Between Fast Fourier and Fast Hartley Transforms.," Proc. of 11th Conference of Electrical Engineering, 16-17 Dec. 1988.

1989

1. P.Thajchayapong, and Chinakarn, "A Further Improvement in the Counting and Direction Sensing Circuit.," Int. J. Electronics, vol. 66, no.6, pp. 935-938; 1989.
2. P.Thajchayapong, Y.Rungsunsiri and C.Punkasirikul, "Design of MURROMA Filters with Equiripple Stopband Attenuation.," Int. J. Electronics, vol. 67, no.1, pp. 73-80,1989.
3. Miharū Kanchit Maitree, Kiyooki Atsuta and Shozo Kondo, "A statistical Analysis of Handwritten Numerics", Memoirs of The Faculty of Engineering Tokai University, vol. 29, no.2, pp. 31-42,1989.
4. P.Thajchayapong, K.Maitree and P.Poajindanate, "Improvement of an Algorithm for Simplification of Remote Sensing Picture.," C.R.S.C. Bulletins KMITL, vol. 2, no.2, pp. 1.1-1.11, Aug. 1989.
5. P.Thajchayapong, K.Maitree and S.Sayasathit, "Computation of Multiweight.," C.R.S.C. Bulletins KMITL, vol. 2, no.2, pp. 2.1-2.11, Aug. 1989.
6. P.Thajchayapong, K.Maitree and P.Pucksaratananon, "Development of Expert System for Consultation of Microcomputer Troubleshooting and Maintenance.," C.R.S.C. Bulletins KMITL, vol. 2, no.2, pp. 3.1-3.10, Aug.1989.
7. P.Thajchayapong, K.Maitree and S.Veeratavemuth, "Improvement of Topological Properties Extraction using Combination of Connected Number.," C.R.S.C. Bulletins KMITL, vol. 2, no.2, pp. 4.1-4.12 Aug. 1989.
8. P.Thajchayapong, K.Maitree and P.Pucksaratananon, "Development of Expert System for Consultation of Microcomputer Troubleshooting and Maintenance.," C.R.S.C. Bulletins KMITL, vol. 2, no.2, pp. 3.1-3.10, Aug.1989.
9. K.Maitree T. Werathawemach, "Flying Target Detection by using Topological Properties of Object.," Proc. of 12th Conference of Electrical Engineering, Nov. 1989
10. S.Jittayasoton, V. Hirankitti, "An Information Base system with an Inductive Learning Interface.," Proc. of 12th Conference of Electrical Engineering, 5-6 Nov. 1989
11. S.Jittayasoton, V. Kitbunrung, "A multitasking operating system kernel for diagnosis Common Diseases.," Proc. of 12th Conference of Electrical Engineering, 5-6 Nov.1989.

12. B. Attachoo, A. Suksomboon, "Comparison of data compression techniques for Digital Image.," Proc. of 12th Conference of Electrical Engineering, 5-6 Nov. 1989.
13. C. Kimpan, S. Ratree, "Multi Fonts Thai Printed Character Recognition.," Proc. of 12th Conference of Electrical Engineering, 5-6 Nov. 1989.
14. C. Kimpan, C. Kasem-Amornkul, "Handprinted Thai Character Recognition of Microcomputer Using concentrate code of each character.," Proc. of 12th Conference of Electrical Engineering, 5-6 Nov. 1989.

1990

1. P. Thajchayapong, and A. Khunkitti, "An Introduction to NMR Imaging.," C.R.S.C. Bulletins KMITL, vol. 1, no.1, pp. 1.1-1.20, Mar. 1990.
2. P. Thajchayapong, K. Maitree and S. Veeratawemuth, "System editor for Software Reusability C.R.S.C. Bulletins KMITL, vol. 2, no.2, pp. 2.1-2.7, Mar. 1990.
3. P. Thajchayapong, K. Maitree and S. Veeratawemuth, "Flying Target Detection by using topological Properties of Object.," C.R.S.C. Bulletins KMITL, vol. 2, no.3, pp. 3.1- 3.12, Mar. 1990.
4. P. Thajchayapong, K. Maitree S. Sayasathit, and V. Wittawatkul, "Development of Chemical Analysis Expert System by using Thai Expert shell.," C.R.S.C. Bulletins KMITL, vol. 2, no.4, pp. 1.1- 1.12, May 1990.
5. P. Thajchayapong, K. Mekhabanchakij and V. Supasuteku, "Animated 3D CT Imaging.," C.R.S.C. Bulletins KMITL, vol. 2, no.4, pp. 2.1- 2.15, May. 1990.
6. P. Thajchayapong, K. Maitree and C. Kraimanee, "Analysis on the Clustering of Handwritten Characters.," C.R.S.C. Bulletins KMITL, vol. 2, no.2, pp. 3.1-3.10, May. 1990.
7. C. Kimpan, S. Walairacht, "On line Recognition on Handwriting Thai characters by considering sequence of Drawing Line.," Proc. of 13th Conference of Electrical Engineering, 10-11 Nov. 1990.
8. B. Attachoo, A. Puntha, "Development of Searching Routes in Map System.," Proc. of 13th Conference of Electrical Engineering, 10-11 Nov. 1990.
9. K. Maitree K. Showcharaensuk, and T. Werathawemach, "Improvement of Topological Properties Extraction for General Digital Picture.," Proc. of 12th Conference of Electrical Engineering, 10-11 Nov. 1990

10. K. Maitree, K. Verathawemach, and C. Klaimanec, "Pattern Recognition of Handwritten Thai Numeric Characters using Topological Properties.," Proc. of 12th Conference of Electrical Engineering, 10-11 Nov. 1990

1991

1. P. Thajchayapong, S. Vannakrairojn, N. Baubthong, "Multiple Real-Pole and Multiple-Critical-Pole Multiple Maximally Flat RC Active Lowpass Filters with Sharp Cut-out.," Int. J. Electronics, vol. 70, no. 1, pp. 151-157, 1991
2. Kondo Shozo and Kanchit Maitree, "Structure of Handwritings using Opposing Relations", fifth Handwriting Conference of The International Graphonomics Society, P.18-20, Arizona USA, October 27-30, 1991
3. P. Thajchayapong, V. Sripayapong and P. Pucksaratananon, "Z80 Emulator.," C.R.S.C. Bulletins KMITL, vol. 2, no. 5, pp. 2.1-2.13, July. 1991.
4. P. Thajchayapong, K. Maitree and S. Veeratawemuth, "Semantic Zooming and Panning System Organization for Geographic Information Retrieval.," C.R.S.C. Bulletins KMITL, vol. 2, no. 5, pp. 2.1-2.13, July. 1991.
5. P. Thajchayapong, R. Varakulsiripun and N. Suntornsaratool, "Designing Data Communication in Microcomputer Network using BUS.," C.R.S.C. Bulletins KMITL, vol. 2, no. 5, pp. 3.1-3.8, July. 1991.
6. P. Thajchayapong, C. Kimpan and S. Mitatha, "Thai Speech Recognition Using Syllable Unite.," C.R.S.C. Bulletins KMITL, vol. 2, no. 6, pp. 1.1-1.9 Sep. 1991.
7. P. Thajchayapong, K. Maitree and S. Sutunchiyanon, "Integration of Image and Database Management.," C.R.S.C. Bulletins KMITL, vol. 2, no. 6, pp. 2.1-2.11, Sep. 1991.
8. P. Thajchayapong, K. Maitree and K. Soljaroensuk, "Object Detection of Airplane by Syntactic Approach, Statistic Approach and Heuristic Technique.," C.R.S.C. Bulletins KMITL, vol. 2, no. 6, pp. 3.1-3.15, July. 1991
9. K. Maitree, C. Kaimance and S. Sukjai, "Bidirectional Associative memory for Recognizing of Thai Numeric Character", Proc. of 14th Conference of Electrical Engineering, 7-8 Nov. 1991.
10. K. Maitree, K. Showcharaensuk, "Conceptual Structural Analysis for Thai Handwritten Recognition", Proc. of 14th Conference of Electrical Engineering, 7-8 Nov. 1991.

11. B. Attachoo, V. Lerdussarakam, "Recognition of Thai Handwritten Characters by Considering Specific Characteristic.", Proc. of 14th Conference of Electrical Engineering, 7-8 Nov. 1991.
12. C. Kimpan, S. Walairacht, "Multiple Fonts Printed Character Segmentation.", Proc. of 14th Conference of Electrical Engineering, 7-8 Nov. 1991.
13. K. Maitree T. Werathawemach, "Geographic Information Retrieval by Semantic function.", Proc. of 14th Conference of Electrical Engineering 7-8 Nov. 1991.
14. C. Kimpan, R. Taengthum, "The application FAX to be I/O device of Micro-computer.", Proc. of 14th Conference of Electrical Engineering, 7-8 Nov. 1991.
15. C. Kimpan, S. Wichachoi, "The separation telephone signals from facimile signals by using the detection speech signals.", Proc. of 14th Conference of Electrical Engineering, 7-8 Nov. 1991.
16. K. Maitree T. Werathawemach, "Semantic Zooming and Panning System Organization for Geographic Information Retrieval.", Proc. of 14th Conference of Electrical Engineering 7-8 Nov. 1991.

1992

1. C. Kimpan, R. Srepramong, "Thai Phone Segmentation by Analysis in Harmonic Frequency.", Proc. of 15th Conference of Electrical Engineering, 7-8 Nov. 1992.
2. C. Kimpan, S. Anuwuk, "Syntactic Technique of Capital English Characters Recognition.", Proc. of 14th Conference of Electrical Engineering, 7-8 Nov. 1992.
3. S. Kondo, K. Maitree, D. Itoh, and K. Atsuta "Structure Analysis of Handwriting Using Opposing Relations", Proc. of 11th IAPR International Conference on Pattern recognition, The Hague, The Netherlands, Aug.-Sep. 3, 1992.
4. K. Maitree, R. Butyojanto, and S. Sukjai "Opposing Relation of Handwriting represented By Absolute Angle", Journal of Engineering Faculty. Ladkrabang 1992.
5. K. Maitree T. Wattanasup, and S. Sukjai, "Directional Histogram of Finger print", Proc. of 15th Conference of Electrical Engineering 7-8 Nov. 1992
6. K. Maitree T. Jintanassoontonsiri, and S. Weratawemas, "Finger print Verification", Proc. of 15th Conference of Electrical Engineering 7-8 Nov. 1992.

9-4. List of Technical Papers (Mechanical Engineering)

9-4-1. Summary of Technical Papers

Year	1988	1989	1990	1991	1992*	Total
International Journal(Including Proc. Tokai Univ.)	0	0	0	1	17	18
International Conference Paper	0	0	2	7	6	15
Journal in Thailand	0	0	2	1	2	5
Conference Paper in Thailand	4	7	13	12	15	51
Total Number of Papers	4 ** (21%)	7 (44%)	17 (113%)	21 (124%)	40 (235%)	89
Number of Research Staff†	19	16	15	17	17*** (21)	--

- Remarks
- * The number of papers in 1992 is estimated number(including the number of papers to be published, under submitted and under prepared).
 - ** Number in the bracket means (number of paper/number of staff) x 100(%).
 - *** Four members employed newly on June 1992 are not included in the calculation of percentage because they were not engaged in research work in the past.
 - † Three staff from Control Engineering Department are joining the project in Mechanical Engineering Field(Mechatronics) as counterparts.

9-4-2. List of Technical Papers

1988

1. M.Mongkolwongrojn and P.Attavanich, "Design of Thermo-hydrodynamic bearings by Microcomputer", Proc.of the 2nd Mechanical Engineering Symposium, Chulalongkorn University.
2. M.Mongkolwongrojn and M.Lokitseangthong, "Thermal Design of an Inclined Roof", Proc.of the 2nd Mechanical Engineering Symposium, Chulalongkorn University.
3. Y.Prempraneerach, "Method of Increasing the Step Resolution of Stepping Motor", Proc.of the 11th Electrical Engineering Conference.
4. Y.Prempraneerach, "Fast Response of the Positioning by Digital Controller", Proc.of the 11th Electrical Engineering Conference.

1989

1. W.Nerdnoi and L.Wongsarnpikul, "Study on Horizontal Rotating String", Proc.of the 3rd Mechanical Engineering Symposium, Prince of Songkhla University.
2. P.Promwong, A.Sindhuphak and T.Iijima, "Flame Propagation in Closed Vessels", Proc.of the 3rd Mechanical Engineering Symposium, Prince of Songkhla University.
3. M.Mongkolwongrojn, "Internal Model Control of Single Input Output System", Proc.of the 3rd Mechanical Engineering Symposium, Prince of Songkhla University.
4. M.Mongkolwongrojn, "Internal Model Control of Level and Temperature in Water Stirred Tank System", Proc.of the 3rd Mechanical Engineering Symposium, Prince of Songkhla University.
5. M.Mongkolwongrojn, "Design and Development of Electronic Fruit Grader", Proc.of the 3rd Mechanical Engineering Symposium, Prince of Songkhla University.
6. Y.Prempraneerach, "Phase-locked Loop for Four Quadrants Motor Speed Control System", Proc.of the 12th Electrical Engineering Conference.
7. Y.Prempraneerach, "Phase-locked Loop for Position Control System", Proc. of the 12th Electrical Engineering Conference.

1990

1. M.Mongkolwongrojn and C.Prabkeaw, "An Experimental Study on the Performance of Internal Combustion Engine with an Energy Storage System", Proc. of the 4th Mechanical Engineering Symposium, KMITT.
2. T.Teschareon, K.Nishimoto and T.Iijima, "Research on the Surface Roughness of Machined Surface", Proc. of the 4th Mechanical Engineering Symposium, KMITT.
3. T.Teschareon and T.Iijima, "Development of Simple Air-Micrometer", Proc. of the 4th Mechanical Engineering Symposium, KMITT.
4. W.Nerdnoi and T.Iijima, "Flow Around Cylinder by Personal Computer", Proc. of the 4th Mechanical Engineering Symposium, KMITT.
5. T.Iijima, T.Nakpipat and P.Promwong, "Flow Characteristics of an Unsteady Jet Ejected into Prechamber Spark Ignition Engine(in English)", Proc. of International Conference on Auto Technology, Chulalongkorn University.
6. M.Mongkolwongrojn and C.Prabkeaw, "An Experimental Study on Energy Storage in Hybrid Vehicles(in English)", Proc. of International Conference on Auto Technology, Chulalongkorn University.
7. K.Sato, S.Norasetsophon, H.Kasuya and Y.Yasui, "The Fracture Mechanics of FRP Plate with Cracks and Notches", Proc. of the 2nd Annual Meeting on Advanced Material Technology, Tokyo.
8. Y.Prempraneerach, et al, "Mathematical Modelling of Step Motor", Journal of the Engineering Institute of Thailand, Vol.2.
9. Y.Prempraneerach, et al, "Measuring the Variation of Torque Depending on Shaft Angle of Stepping Motor Application for Shift the Equilibrium Position Torque", Proc. of the 13th Electrical Engineering Conference.
10. Y.Prempraneerach and J.Ngamwivit, "Start-stop of Motion Control System with Minimum Time by Using Piecewise Continuous Input", Proc. of the 13th Electrical Engineering Conference.
11. Y.Prempraneerach, et al, "Improvement Setpoint Tracking by Pole-zero Placement Controller", Proc. of the 13th Electrical Engineering Conference.
12. Y.Prempraneerach, et al, "A New PFD Controller for Fast Lock in a Position Servo System", Proc. of the 13th Electrical Engineering Conference.
13. Y.Prempraneerach, et al, "Use of MARC for Improving the External Disturbance Response of DC Motor Position Control System", Proc. of the 13th Electrical Engineering Conference.

14. Y.Prempraneerach, et al, "Four Quadrants Speed Control of DC Motor Based on Microprocessor", Proc.of the 13th Electrical Engineering Conference.
15. Y.Prempraneerach, et al, "Motor Speed Measurement Based on 8031 Micro-processor", Proc.of the 13th Electrical Engineering Conference.
16. J.Ngamwittit, et al, "Improved Pre-undershoot in Model Reduction Obtained by Aggregation", Proc.of the 13th Electrical Engineering Conference.
17. Y.Prempraneerach and J.Ngamwittit, "Application of the Integral Controller for Minimum Time Setting Control of DC Motor Speed by Piecewise Continuous Input", Journal of the Engineering Institute of Thailand, Vol.4.

1991

1. K.Umezawa, H.Houjoh and M.Mongkolwongroj, "Experimental Studies on Helical Gear Vibration with Included Bearings Stiffness Effects(in English)", Proc.of International Conference on Motion and Power Transmissions, Hiroshima, Japan.
2. M.Mongkolwongroj and H.Hashimoto, "Static Characteristic Analysis of a High Speed Elliptical Journal Bearing with Included Surface Roughness Effect(in English)", Proc.of the 5th Mechanical Engineering Symposium, Chiangmai University.
3. H.Hashimoto and M.Mongkolwongroj, "Dynamic Behaviour of Short Elliptical Journal Bearings with Non-Newtonian Lubricants(in English)", Proc. of the 5th Mechanical Engineering Symposium, Chiangmai University.
4. H.Hashimoto and M.Mongkolwongroj, "Approximate Adiabatic Solution for Dynamic Characteristic of Turbulent Journal Bearings with Homogeneous Surface Roughness Effect(in English)", Proc.of the 5th Mechanical Engineering Symposium, Chiangmai University.
5. C.Prabkeaw and H.Hashimoto, "Fundamental Study of a Frequency Response of Hydraulic Servo-Mechanism", Proc.of the 5th Mechanical Engineering Symposium, Chiangmai University.
6. A.Sindhuphak, S.Hagi, S.Murakami, M.Maeda and T.Iijima, "Acoustical Performance of Helmholtz's Type Resonators", Proc.of the 5th Mechanical Engineering Symposium, Chiangmai University.
7. A.Sindhuphak, S.Hagi, S.Murakami and M.Maeda, "Acoustical Performance of Side-Branch Type Silencers", Proc.of the 5th Mechanical Engineering Symposium, Chiangmai University.

8. S.Norasetsophon, Y.Yasui, H.Kasuya and H.Moriyama, "The Fracture Mechanics off FRP Plate with Notches", Proc.of the 5th Mechanical Engineering Symposium, Chiangmai University.
9. P.Attavanich and N.Hayashi, "Bending Fatigue Strength of Heat-Resisting Aluminium Alloy AC8A-F", Proc.of the 5th Mechanical Engineering Symposium, Chiangmai University.
10. T.Teschareon and K.Nishimoto, "Research on Surface Roughness for Machined Specimens", Proc.of the 5th Mechanical Engineering Symposium, Chiangmai University.
11. A.Soontornchati, "Study on Pollution of Gasoline Engine by Consumption of Fuel Control System", Proc.of the 5th Mechanical Engineering Symposium, Chiangmai University.
12. P.Promwong, "Heat-Exchanger Selection for Automotive Air Conditioning System", Proc.of the 5th Mechanical Engineering Symposium, Chiangmai University.
13. M.Hayashi and P.Attavanich, "Rotating Bending Fatigue Strength of Uni-Directional Solidified AC8A Aluminium Alloy(in English)", Transaction of the Japan Foudrymen's Society, Vol.10, pp.38-45.
14. M.Maeda, Y.Natori, A.Sindhuphak, S.Murakami and S.Hagi, "Effects of Flow Generated Noise on Attenuation Characteristics of Expansion Chamber Mufflers(in English)", Proc.of the 3rd International Symposium on Fluid Control, Measurement and Vibration, San-Francisco.
15. S.Murakami, S.Hagi and A.Sindhuphak, "Relation Between Flow Pattern and Flow Generated Noise in Expansion Chamber Mufflers(in English)", Proc.of the 3rd International Symposium on Control, Measurement and Vibration, San-Francisco.
16. K.Ohta, S.Okada, S.Norasetsophon, K.Sato, H.Moriyama, H.Kasuya and Y.Yasui, "Fracture Strength Analysis of FRP Plate with Notches(in Japanese)", Proc.of JSME Spring Meeting.
17. K.Umezawa, H.Houjoh And M.Mongkolwongrojn, "Helical Gear Vibration with Included Bearing's Stiffness Effects(in Japanese)", Proc.of JSME Spring Meeting.
18. M.Hayashi and P.Attavanich, "Rotating Bending Fatigue Strength of Uni-Directionally Solidified AC8A Aluminium Alloy(in Japanese)", Proc.of the 69th JSME Annual Meeting.
19. Y.Prempraneerach and K.Petchsuwan, "Transducers and Sensors for Low Cost Automation Technology", Regional Seminar on Low Cost Automation at Philippines.
20. T.Suksai, "Induction Motor Speed Control with PWM Method Based on Micro-processor", Journal of the Engineering Institute of Thailand.

21. Y.Prempraneerach, et al, "Design and Construction of a 750 Watts Inverter for Induction Motor Drives", Proc.of the 14th Electrical Engineering Conference.

1992

1. H.Hashimoto and M.Mongkolwongroj, "Adiabatic Approximate Solution of Static and Dynamic Characteristics of Turbulent Partial Journal Bearings with Surface Roughness(in English)", Transaction of ASME Journal of Tribology, under submitted.
2. H.Hashimoto and M.Mongkolwongroj, "The Effects of Fluid Inertia Forces on Visco-Elastic Squeeze Film Characteristics(in Japanese)", Transaction of JSME, Ser.C, 58-552, 1992-8, pp.209-213.
3. H.Hashimoto and M.Mongkolwongroj, "Static Characteristics of High-Speed Slider Bearings Lubricated with Non-Newtonian Fluids(in Japanese)", Transaction of JSME, Ser.C, 58-556, 1992-12.
4. H.Hashimoto and M.Mongkolwongroj, "Squeeze Film Characteristics Between Parallel Circular Plates Containing a Single Central Air Bubble(Numerical Results)(in Japanese)", Transaction of JSME, Ser.C, 58-555, 1992-11.
5. M.Mongkolwongroj, C.Prabkeaw and H.Hashimoto, "Theoretical Prediction of the Journal Center Trajectories of Two-Lobe Hydrodynamic Journal Bearings(in English)", JSME International Journal, under submitted.
6. H.Hashimoto, M.Mongkolwongroj and C.Prabkeaw, "Turbulent Lubrication Theory Based on Frictional Law of Fluid(In the Case of One-Dimensional Lubrication Flow)(in Japanese)", Transaction of JSME, Ser.C, under submitted.
7. H.Hashimoto and M.Mongkolwongroj, "Dynamic Characteristics of Elliptical Journal Bearings Lubricated with Pseudo-Plastic Fluids(Part 1)(in Japanese)", Proc.of the Faculty of Engineering, Tokai University, 1992, No.2, under submitted.
8. M.Mongkolwongroj and H.Hashimoto, "Static and Dynamic Characteristics of Elliptical Journal Bearings with Non-Newtonian Lubricants(in English)", Tribology International, UK, under prepared.
9. M.Mongkolwongroj and H.Hashimoto, "Theoretical Analysis of Long Journal Bearign with Non-Newtonian Grease(in English)", Journal of Science in Thailand, under submitted.
10. M.Mongkolwongroj and H.Hashimoto, "Static Characteristics Analysis of Smooth Surface Elliptical Journal Bearings in Turbulent Regime", Proc.of Engineering Institute of Thailand.
11. M.Mongkolwongroj and H.Hashimoto, "Grease Lubrication in Hydrodynamic Long Inclined Slider Bearings", Proc.of Engineering Institute of Thailand.

12. H.Hashimoto, M.Mongkolwongrojn and C.Prabkeaw, "Dynamic Characteristics of Elliptical Journal Bearings Lubricated with Pseudo-Plastic Fluids (Part II)(in Japanese)", Proc.of the Faculty of Engineering, Tokai University, 1992, No.2, under submitted.
13. A.Sindhuphak, S.Murakami, T.Wada, K.Okada, M.Maeda and S.Hagi, "Acoustical Performance of Helmholtz Type Silencers(Transmission Loss of Resonators Arranged by the Side of a Duct, 1st Report)(in Japanese)", Proc.of the Faculty of Engineering, Tokai University, 1992, No.2, under submitted.
14. P.Attavanich and M.Hayashi, "Rotating Bending Fatigue Strength at Elevated Temperature of Uni-Directional Solidified AC8A Aluminium Alloy (in English)", Transaction of the Japan Foundrymen's Society, under prepared.
15. A.Sindhuphak, S.Murakami, T.Wada, K.Okada, M.Maeda and S.Hagi, "Acoustical Performance of Helmholtz Type Silencers(Transmission Loss of Resonators Arranged by the Side of a Duct, the 2nd Report)(in English)", Proc.of the Faculty of Engineering, Tokai University, 1993, No.1, under prepared.
16. T.Nakpipat, A.Soonpornchati and T.Iijima, "A Gasdynamic Analysis of Flame Propagation in Closed Vessels(in English)", Proc.of the Faculty of Engineering, Tokai University, 1993, No.1, under prepared.
17. H.Hashimoto, M.Mongkolwongrojn and M.Pimsarn, "Simplified Tribological Model for Human Knee Joints under Squeeze Film Action(Part I)(in English)", Proc.of the Faculty of Engineering, Tokai University, 1993, No.1, under prepared.
18. H.Hashimoto, M.Mongkolwongrojn and M.Pimsarn, "Simplified Tribological Model for Human Knee Joints under Squeeze Film Action(Part II)(in English)", Proc.of the Faculty of Engineering, Tokai University, 1993, No.1, under prepared.
19. H.Hashimoto and J.Ngamwiwit, "Optimum Trajectory of Multi-Joint-Robot for Avoiding Collision with Obstacles(in Japanese)", Proc.of the Faculty of Engineering, Tokai University, 1993, No.1, under prepared.
20. K.Aoki and C.Prabkeaw, "Application of Jet Pump for the Transportation of Grain(in Japanese)", Proc.of the Faculty of Engineering, Tokai University, 1993, No.1, under prepared.
21. H.Hashimoto and M.Mongkolwongrojn, "Static Characteristics of High Speed Slider Bearing Lubricated with Non-Newtonian Fluid(in Japanese)", Proc. of 1992 Spring Annual Tribology Conference, 1992-5.
22. H.Hashimoto and M.Mongkolwongrojn, "The Effects of Fluid Inertia Forces on Visco-Elastic Squeeze Film Characteristics(in Japanese)", Proc. of 1992 Spring Annual Tribology Conference, 1992-5.

23. H.Hashimoto and M.Mongkolwongrojn, "Squeeze Film Characteristics Containing Cylindrical Type Air Bubble(in Japanese)", Proc.of the 70th Mechanical Engineering Conference, 1992-10.
24. H.Hashimoto, M.Mongkolwongrojn and C.Prabkeaw, "Turbulent Lubrication Theory Considering Non-Newtonian Effect(Formulation Based on Frictional Law of Fluid)(in Japanese)", Proc.of the 70th Mechanical Engineering Conference, 1992-10.
25. H.Hashimoto and M.Mongkolwongrojn, "Adiabatic Approximate Solution of Static and Dynamic Characteristic of Turbulent Journal Bearings with Surface Roughness(in English)", Proc.of 1992 ASME-STLE Tribology Joint International Conference, 1992-10.
26. S.Murakami, K.Okada, A.Sindhuphak and M.Maeda, "Transmission Loss of Helmholtz-Type Resonator(in Japanese)", Proc.of Autumn Meeting of Japan Society of Acoustics, 1992-10.
27. P.Attavanich, "Estimation of Carbon Content Steel by Using Micro-Computer", Proc.of the 6th Mechanical Engineering Symposium, Kasetsart University.
28. P.Attavanich, "Rotating Bending Fatigue Strength at Elevated Temperature of Uni-Directional Solidified AC8A Aluminium Alloy", Proc.of the 6th Mechanical Engineering Symposium, Kasetsart University.
29. A.Soonpornchati, T.Nakpipat and T.Iijima, "Use of Computer in Data Analysis of Combustion", Proc.of the 6th Mechanical Engineering Symposium, Kasetsart University.
30. A.Sindhuphak, "Experimental Study on the Efficiency of the Silencer Type Helmholtz", Proc.of the 6th Mechanical Engineering Symposium, Kasetsart University.
31. T.Teschareon, "Research on the Geometrical Accuracy of Wirecut EDM Surface Roughness and Surface Hardness", Proc.of the 6th Mechanical Engineering Symposium, Kasetsart University.
32. M.Mongkolwongrojn and H.Hashimoto, "Experimental Study on Vibration Behaviour in Deep Groove Ball Bearing", Proc.of the 6th Mechanical Engineering Symposium, Kasetsart University.
33. M.Mongkolwongrojn and H.Hashimoto, "Computer Control of Water Level in Two Connected Pipes", Proc.of the 6th Mechanical Engineering Symposium, Kasetsart University.
34. M.Mongkolwongrojn, H.Hashimoto and M.Pimsarn, "Static Characteristic of Rough Surface Elliptical Journal Bearings with Finite Length in Turbulent Regime", Proc.of the 6th Mechanical Engineering Symposium, Kasetsart University.

35. H.Hashimoto and M.Mongkolwongroj, "Spring and Damping Properties of Two-Lobe Hydrodynamic Journal Bearings(in English)", Proc.of the 6th Mechanical Engineering Symposium, Kasetsart University.
36. H.Hashimoto and M.Mongkolwongroj, "Dynamic Behaviour of Rigid Rotor Supported by Two-Lobe Hydrodynamic Journal Bearings(in English)", Proc. of the 6th Mechanical Engineering Symposium, Kasetsart University.
37. H.Hashimoto and M.Mongkolwongroj, "Journal Center Trajectory of Imbalanced Rotor Supported by Short Elliptical Journal Bearings with Non-Newtonian Lubricants(in English)", Proc.of the 6th Mechanical Engineering Symposium, Kasetsart University.
38. T.Nakpipat and A.Soontornchati, "Study on Truck and Trailer Safety", Proc.of the 6th Mechanical Engineering Symposium, Kasetsart University.
39. P.Kampanyim, "Design of Automatic CO2 Gas Welding Machine", Proc.of the 6th Mechanical Engineering Symposium, Kasetsart University.
40. Y.Prempraneerach, "Improving Single-step Oscillation Response of Stepping Motor", Journal of the Engineering Institute of Thailand.

2. Joint Committee 資料
(The Report for the Fifth Joint Committee)



THE EXPANSION PROJECT OF
KING MONGKUT'S INSTITUTE OF TECHNOLOGY LADKRABANG

Fifth Joint Committee Meeting

23 November 1992

CONTENTS

Agenda	i
Joint Committee	ii
Background Information	iv
Report of the Expansion Project of KMITL (1988 - 1993)	1

AGENDA

Joint Committee Meeting for the Expansion Project
of King Mongkut's Institute of Technology Ladkrabang

Office of the Rector, KMITL

Monday 23 November 1992, 14.00 hours

1. Review of the Report.
 2. Exchange of views on major issues.
 3. Other matters.
-

Joint Committee

- 1. Prof. Dr. Pairash Thajchayapong, KMITL Rector, Chairman
- 2. Assoc. Prof. Dr. Somkiat Supadech, Dean, Faculty of Engineering
- 3. Assoc. Prof. Dr. Chom Kimpan, Director, Computer Research and Service Center
- 4. Asst. Prof. Dr. Kobchai Dejhan, Head, Department of Telecommunications Engineering
- 5. Mr. Pradit Vachrapibool, Head, Department of Industrial Technology
- 6. Asst. Prof. Dr. Mongkol Mongkolwongrojn, Head, Department of Mechanical Engineering
- 7. Assoc. Prof. Dr. Yothin Prempraneerath, Head, Dept. of Control Engineering
- 8. Dr. Voravat Limpoka, Head, Department of Computer Engineering
- 9. Dr. Chantavit Sujatanond, Director of Foreign Relations Division, Ministry of University Affairs. MUA Representative
- 10. Mrs. Tipsuda Nopmongcol, Chief of Japan Sub-Division, External Cooperation Div. III, Dept. of Technical and Economic Cooperation, DTEC Representative
- 11. Representative, Office of the Civil Service Commission
- 12. Representative, Bureau of the Budget
- 13. Mr. Norinobu Hayashi, Leader, JICA Evaluation Team
- 14. Mr. Kaoru Suzuki, Member, JICA Evaluation Team
- 15. Mr. Kiyoshi Yamamoto, Member, JICA Evaluation Team
- 16. Mr. Kazutoshi Kurauchi, Member, JICA Evaluation Team
- 17. Prof. Dr. Shiro Yamada, Member, JICA Evaluation Team
- 18. Ms. Eri Sugita, Coordinator, JICA Evaluation Team
- 19. Mr. Chiyohiko Hakoishi, Chief Adviser and Expert in Data Communication
- 20. Mr. Mutsuo Murasato, Expert in Broadcasting
- 21. Mr. Kaname Hiraguri, Expert in Telecommunications
- 22. Prof. Dr. Hiromu Hashimoto, Expert in Mechanical Engineering
- 23. Mr. Tomoyuki Irie, JICA Coordinator
- 24. Mr. Nobuji Abe, Resident Representative, JICA Thailand Office

Observers

- 1. Asst. Prof. Dr. Supachai Ratanopas, Vice-Rector for Academic Affairs
 - 2. Assoc. Prof. Dr. Kosan Kusamran, Vice-Rector for International Affairs
 - 3. Asst. Prof. Dr. Jongkol Nganwiwit, Assistant Rector for International Affairs
 4. Mr. Masahiko Metoki, First Secretary, Embassy of Japan
 5. Mr. Makoto Ashino, Assistant Resident Representative, JICA Thailand Office
-

Background Information

The Institute King Mongkut's Institute of Technology Ladkrabang (KMITL) was established in 1971 as the Ladkrabang Campus of KMIT and became a full national university in 1986. Its origin went back to the Nondhaburi Telecommunications Training Center, which was established in 1960 with technical cooperation from the Government of Japan. Through step-by-step development the Training Center then became the Nondhaburi Institute of Telecommunications, and finally the Faculty of Engineering in KMITL. The Institute now has five faculties, one school and one center: Faculties of Engineering, Architecture, Industrial Education, Science, Agricultural Technology, School of Graduate Studies, and Computer Research and Service Center. At present there are 7,000 students engaged in 41 bachelor's degree programmes, 10 master's degree programmes, and the doctorate programme in electrical engineering.

The Project On 15 December 1987 the record of discussions for the Expansion Project of KMITL was concluded by Mr. Masao Hasegawa, Leader of the Implementation Survey Team, and Dr. Kosol Petchsuwan, KMITL Rector. This agreement was the result of two previous missions in the same year: the Preliminary Survey Team headed by Mr. Yoshiyuki Takeda in March, and the Preliminary Study Team headed by Mr. Kobo Inamura in September.

The Expansion Project of KMITL is a technical cooperation project having the duration of 5 years from 1988-1993. It covers 4 fields: telecommunications, broadcasting, data communication, and mechanical engineering. There are 3 components of the cooperation: experts from Japan, fellowships for KMITL counterparts to receive training in Japan, and equipment.

Long-Term Experts

1) Chief Adviser and Expert in Data Communication: Mr. Chiyohiko Hakoishi, Special Adviser, Ministry of Posts and Telecommunications (MPT), took up his appointment from 22 August 1991. He succeeded Mr. Masabumi Kawamura, Communications Research Laboratory, MPT, who served in this post from 31 May 1988 to 30 May 1991.

2) Expert in Telecommunications: Mr. Kaname Hiraguri, International Affairs Department, Nippon Telegraph and Telephone Corporation (NTT), continues his appointment starting from 9 August 1990.

3) Expert in Broadcasting: Mr. Mutsuo Murasato, Broadcasting Engineering Department, Japan Broadcasting Corporation (NHK), continues his appointment starting from 21 May 1990.

4) Expert in Mechanical Engineering: Dr. Hiromu Hashimoto, Professor of Mechanical Engineering, Faculty of Engineering, Tokai University, took up his appointment from 9 April 1991. He succeeded Professor Dr. Toshio Iijima, also of Tokai University, who served in this post from 18 April 1988 to 17 April 1991.

5) Coordinator: Mr. Tomoyuki Irie, Social Development Cooperation Department, Japan International Cooperation Agency (JICA), succeeded Mr. Hideo Sakuraba, his appointment starting on 12 March 1992.

REPORT

THE EXPANSION PROJECT OF
KING MONGKUT'S INSTITUTE OF TECHNOLOGY LADKRABANG

1988-1993

NOVEMBER 1992

C O N T E N T S

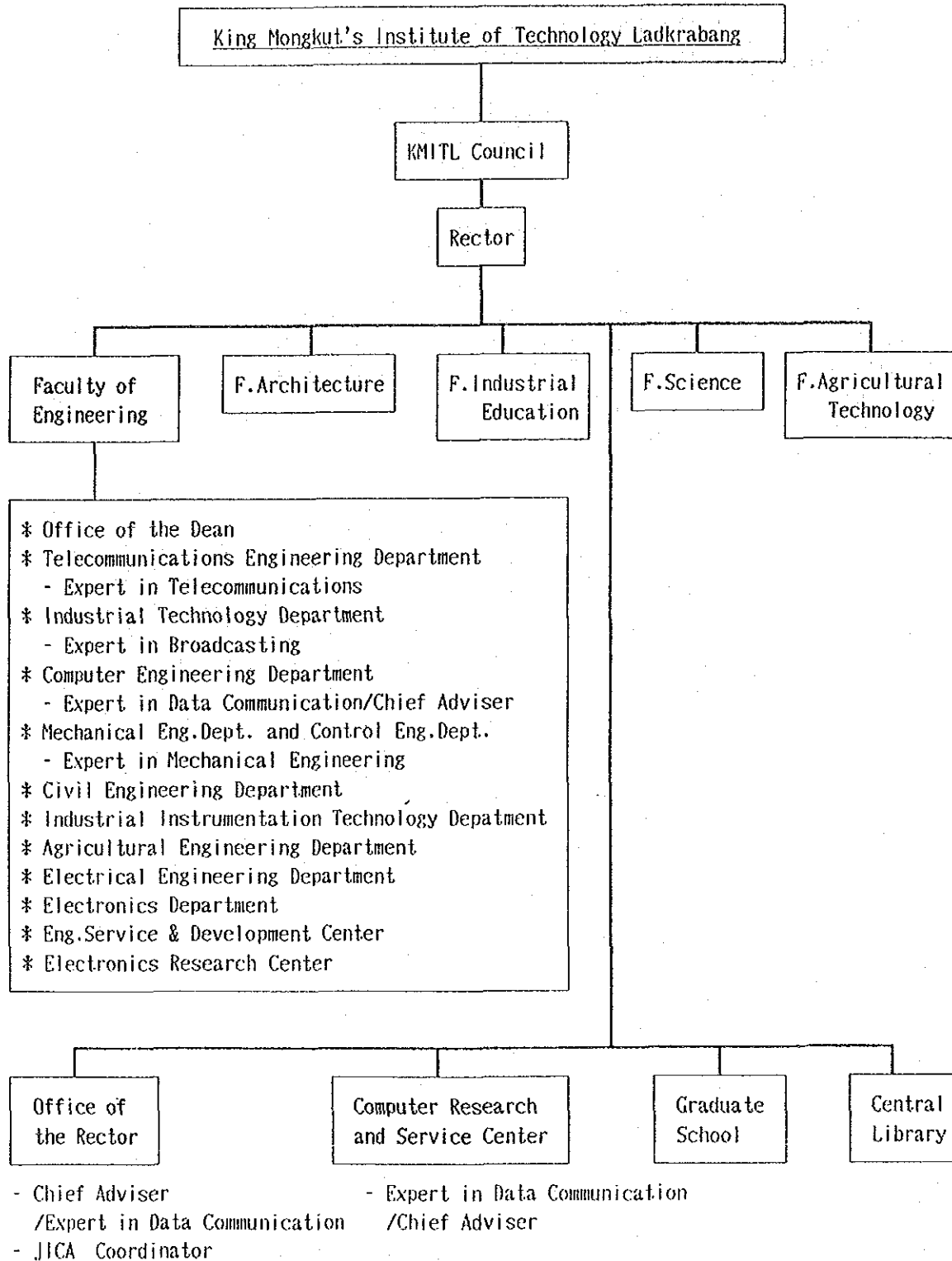
I. GENERAL	3
1. PROJECT ORGANIZATION CHART	4
2. KMITL ORGANIZATION CHART (1988 AND 1993)	5
II. INPUTS	6
1. BUDGETS	
1-1. JICA BUDGETS	7
1-2. KMITL BUDGETS	8
1-3. DTEC BUDGETS	9
2. EXPERTS DISPATCHED	
2-1. LONG-TERM EXPERTS	10
2-2. SHORT-TERM EXPERTS	11
3. COUNTERPART PERSONNEL TRAINING IN JAPAN	16
4. EQUIPMENT PROVIDED	18
III. OUTPUTS 1	22
1. NUMBER OF STUDENTS	23
2. TREND OF NUMBER OF STUDENTS AND STAFF SINCE 1961	24
3. UNIVERSITY ENTRANCE EXAMINATION RESULTS OF ENGINEERING STUDENTS (ACADEMIC YEARS 1988 - 1992)	26
4. NUMBER OF GRADUATES	32
OUTPUTS 2	33
1. TELECOMMUNICATIONS	34
2. BROADCASTING	49
3. DATA COMMUNICATION	59
4. MECHANICAL ENGINEERING	83

TELECOMMUNICATIONS	34
1. CURRICULUM	35
2. TEXTBOOKS PUBLISHED BY JICA SUPPORT	39
3. LIST OF TECHNICAL PAPERS	41
4. STAFF STUDYING IN DOCTOR/MASTER COURSE	46
5. STAFF INVOLVED IN RESEARCH AND TRAINING ABROAD	46
6. EDUCATIONAL BACKGROUND OF STAFF	47
7. RESEARCH FUNDS	47
BROADCASTING	49
1. CURRICULUM	50
2. TEXTBOOKS PUBLISHED BY JICA SUPPORT	53
3. LIST OF TECHNICAL PAPERS	54
4. STAFF INVOLVED IN RESEARCH AND TRAINING ABROAD	57
5. EDUCATIONAL BACKGROUND OF STAFF	57
6. RESEARCH FUNDS	58
DATA COMMUNICATION	59
1. CURRICULUM	60
2. TEXTBOOKS PUBLISHED BY JICA SUPPORT	68
3. LIST OF TECHNICAL PAPERS	70
4. STAFF STUDYING IN DOCTOR/MASTERR COURSE	76
5. STAFF INVOLVED IN RESEARCH AND TRAINING ABROAD	78
6. EDUCATIONAL BACKGROUND OF STAFF	79
7. RESEARCH FUND	80
MECHANICAL ENGINEERING	83
1. CURRICULUM	84
2. TEXTBOOKS PUBLISHED BY JICA SUPPORT	87
3. LIST OF TECHNICAL PAPERS	89
4. STAFF STUDYING IN MASTER/DOCTOR COURSE	98
5. STAFF INVOLVED IN RESEARCH AND TRAINING ABROAD	99
6. EDUCATIONAL BACKGROUND OF STAFF	100
7. RESEARCH FUNDS	101

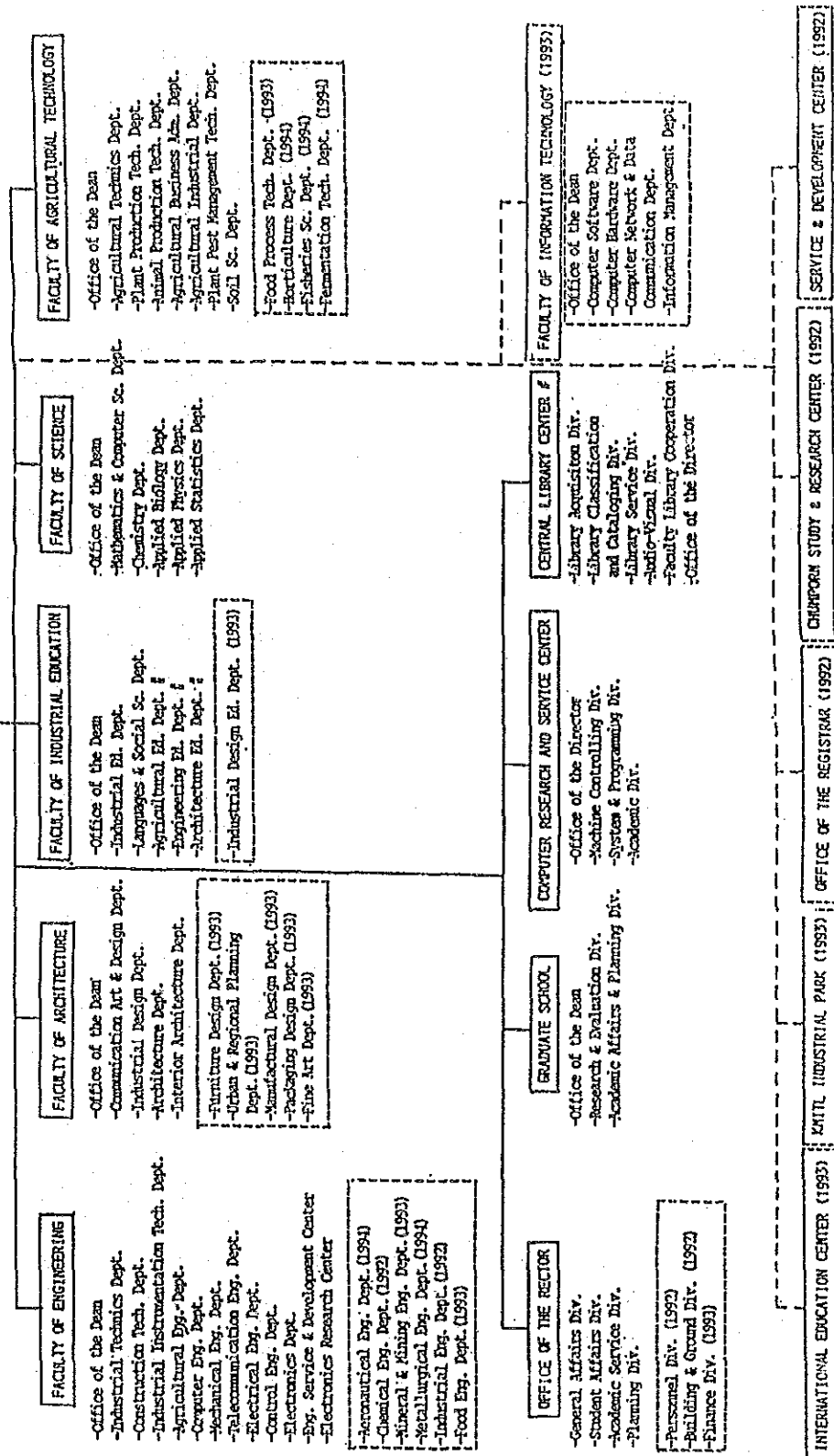
I. GENERAL

1. PROJECT ORGANIZATION CHART	4
2. KMITL ORGANIZATION CHART (1988 AND 1993)	5

1. Project Organization Chart



KING MONGKUT'S INSTITUTE OF TECHNOLOGY LADKRABANG
PROJECT ORGANIZATION CHART (1988 AND 1993)



NOTE

Ø : proposed for approval

[] : included in 7th National Plan

ABBREVIATION

Dep. : Department Eng. : Engineering Ed. : Education Adm. : Administration
Div. : Division Tech. : Technology Sci. : Science

PLANNING DIVISION

OFFICE OF THE RECTOR, MHITL

April 1991

II. INPUTS

1. BUDGETS	
1-1. JICA BUDGETS	7
1-2. KMITL BUDGETS	8
1-3. DTEC BUDGETS	9
2. EXPERTS DISPATCHED	
2-1. LONG-TERM EXPERTS	10
2-2. SHORT-TERM EXPERTS	11
3. COUNTERPART PERSONNEL TRAINING IN JAPAN	16
4. EQUIPMENT PROVIDED	18

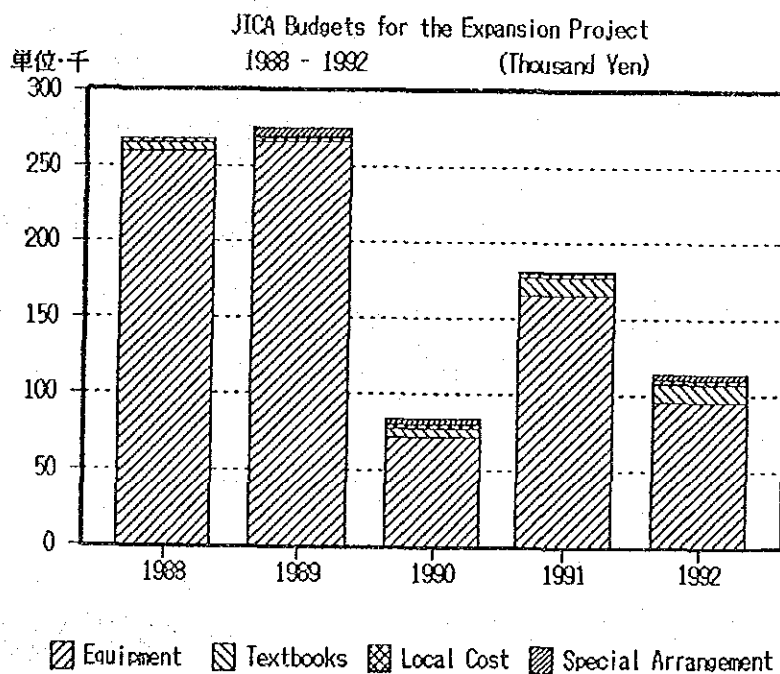
1-1. JICA Budgets for the Expansion Project (1988-1992)

* JFY	** Equipment	Textbooks	Local Costs	*** Special Arrangements	(Thousand Yen) Total
1988	259,736	5,210	2,498	0	267,444
1989	266,081	0	2,756	6,000	274,837
1990	71,796	5,742	2,674	3,621	83,833
1991	165,324	12,154	3,028	811	181,317
1992	94,982	11,600	2,650	3,445	112,677
Total	881,600 857,919	34,706	13,606	13,877	693,789 920,108

Remarks: * Japan Fiscal Year

** Including the equipment carried by short-term experts.

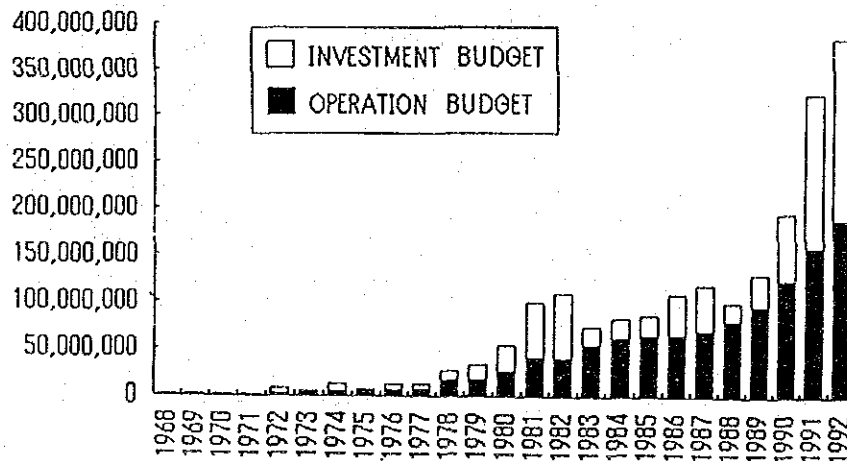
*** Research work, Technical Exchanges, Seminars, Construction.



1-2. KMITL Budgets (1968-1992)

Fiscal Year	(1) Operation Budget	(2) Investment Budget	Total (Million Baht)
1968	0.97	-	0.97
1969	1.07	-	1.07
1970	1.18	-	1.18
1971	1.43	-	1.43
1972	1.70	6.00	7.70
1973	3.45	0.11	3.56
1974	3.96	8.42	12.38
1975	4.23	3.12	7.35
1976	5.66	7.38	13.04
1977	7.17	5.77	12.94
1978 (3)	16.30	10.48	26.78
1979 (4)	17.57	15.79	33.36
1980 (5)	25.20	28.15	53.35
1981	39.92	59.19	99.11
1982	39.45	70.01	109.46
1983 (6)	53.82	20.03	73.85
1984	61.06	21.78	82.84
1985	63.55	22.24	85.79
1986	63.73	44.55	108.28
1987	69.23	48.36	117.59
1988	79.09	20.50	99.59
1989	95.11	34.68	129.79
1990	123.00	71.91	195.00
1991	157.12	165.50	322.62
1992	187.85	194.14	381.99

- Notes: 1) Operation budget includes salaries, wages and materials.
 2) Investment budget includes equipment and building expenses.
 3) The budget of the Faculty of Architecture is included.
 4) The budget of the Faculty of Industrial Education and Science is included.
 5) The budget of the Faculty of Agricultural Technology is included.
 6) The budget of the Computer Research and Service Center is included.

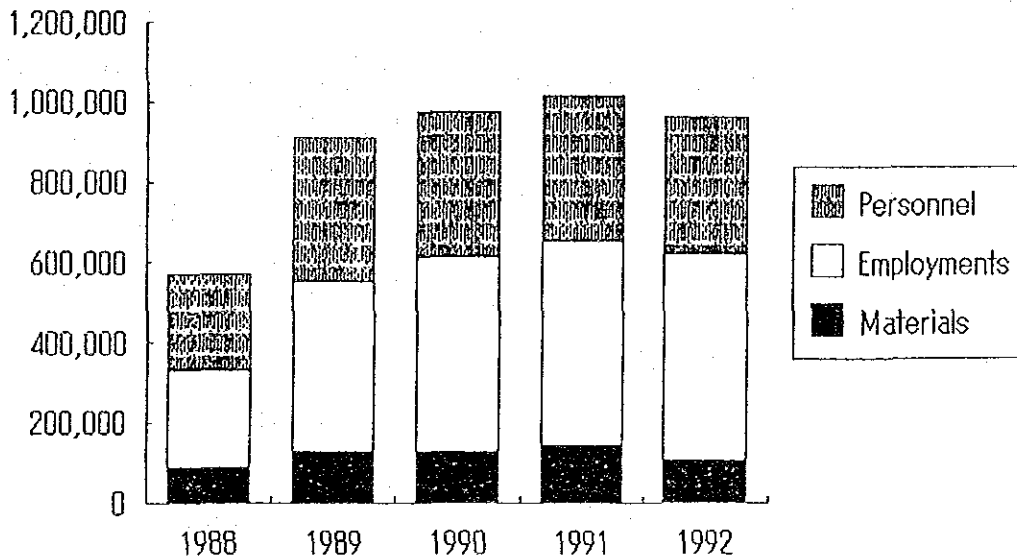


1-3 DTEC Budgets for the Expansion Project(1988-1992)

(September 1992)

	1988	1989	1990	1991	1992
<u>Materials</u>					
Oil	71,200	101,400	101,400	116,800	79,550
Car Repair	10,000	15,000	15,000	15,000	13,330
Car Spare Parts	5,000	10,000	10,000	10,000	10,000
(Total)	(86,200)	(126,000)	(126,400)	(141,800)	(102,880)
<u>Employments</u>					
Secretary's Salary	177,000	312,000	336,500	354,000	391,000
Driver's Salary	67,800	114,000	152,750	159,000	128,250
(Total)	(244,800)	(426,000)	(489,250)	(513,000)	(519,550)
<u>Personnel</u>					
Accommodation	240,000	360,000	360,000	360,000	340,000
(Total)	(240,000)	(360,000)	(360,000)	(360,000)	(340,000)
TOTAL	517,000	912,400	975,650	1,014,800	962,430

Bak-f



2. Experts Dispatched

2-1. Long-Term Experts

No.	Name	Field	Assigned Period	Organization
1.	Toshio Iijima	Mechanical Eng.	1988.4.18 - 1991.4.17	Tokai Univ.
2.	Masabumi Kawamura	Data Communication *	1988.5.31 - 1991.5.30	NPT
3.	Yonosuke Tamura	Broadcasting	1988.5.31 - 1990.5.30	NHK
4.	Hiroshi Kato	Coordinator	1988.6.30 - 1989.9.29	JICA
5.	Masayasu Komoto	Telecommunications	1988.8.18 - 1990.8.17	NTT
6.	Hideo Sakuraba	Coordinator	1989.9.20 - 1992.3.31	JICA
7.	Mutsuo Murasato	Broadcasting	1990.5.21 - 1993.3.31	NIHK
8.	Kaname Hiraguri	Telecommunications	1990.8.9 - 1993.3.31	NTT
9.	Hiromu Hashimoto	Mechanical Eng.	1991.4.9 - 1993.3.31	Tokai Univ.
10.	Chiyohiko Hakoishi	Data Communication *	1991.8.22 - 1993.3.31	NPT
11.	Tomoyuki Irie	Coordinator	1992.3.12 - 1993.3.31	JICA

* Chief Adviser

2-2. Short-Term Experts

No.	Name	Field	Subject	Assigned Period	Organization
1.	Y. Oka	Data Comm.	Installation	Jan.27 - Jul.10,1989	NEC
2.	S. Himeno	ditto	Installation	Jan.27 - Jul.24,1989	NEC
3.	K. Shikano	ditto	Installation	Jul. 3 - Aug.20,1989	NEC
4.	H. Kawata	ditto	Installation	Jul. 3 - Aug.20,1989	NEC
5.	K. Shikano	ditto	Software Training	Oct.20 - Dec.19,1989	NEC
6.	H. Kawata	ditto	Software Training	Oct.20 - Dec.19,1989	NEC
7.	S. Himeno	ditto	Hardware expansion	Nov.10 - Nov.30,1989	NEC
8.	S. Minamizono	ditto	Hardware expansion	Nov.10 - Nov.30,1989	NEC
9.	K. Shikano	ditto	Data Base	Jan.17 - Jul.28,1990	NEC
10.	H. Kawata	ditto	Data Base	Jul. 1 - Jul.28,1990	NEC
11.	T. Otsuki	ditto	Graphics	Jul. 1 - Jul.14,1990	NEC
12.	K. Shikano	ditto	(NCS) Software	Dec. 2 - Dec.29,1990	NEC
13.	Y. Kawata	ditto	(NCS) Software	Dec. 2 - Dec.28,1990	NEC
14.	S. Ohara	ditto	Information Technology	Mar. 9 - Mar.23,1992	Tokai Univ.
15.	H. Tominaga	ditto	Information Technology	Mar. 8 - Mar.15,1992	Waseda Univ.
16.	T. Nomiya	ditto	Data Communication	Feb.23 - Mar. 7,1992	NEC
17.	H. OKuno	ditto	Local Area Network	Mar. 1 - Mar. 7,1992	NEC
18.	M. Kanazawa	ditto	Campus Network	Sep.19 - Sep.27,1992	Kyoto Univ.
19.	H. Nomura	ditto	Information Technology	Sep.27 - Oct. 4,1993	Tokai Univ.

No.	Name	Field	Subject	Assigned Period	Organization
20.	S. Ohara	Data Comm.	Information Technology	Sep.27 - Oct. 4,1992	Tokai Univ.
21.	-	ditto	Protocol Analysis	Nov.,1992	NEC
22.	-	ditto	Protocol Analysis	Nov.,1992	NEC
23.	-	ditto	Advanced Software Training	Dec.,1992	NEC
24.	-	ditto	Campus Network	-	NEC
25.	-	ditto	Information Technology	-	-

26.	Y. Suzuki	Telecomm.	Digital Microwave Installation	Jun.20 - Jul.11,1989	NEC
27.	T. Ikeda	ditto	Digital Microwave Equipment Guidance	Jun.27 - Jul.11,1989	NEC
28.	N. Wakimoto	ditto	Optical Fiber Multiplex Equipment Installation	Jul.18- Aug. 1,1989	NEC
29.	Y. Sato	ditto	Radio Communication Guidance	Jul.16 - Aug.24,1989	NTT
30.	T. Kuroda	ditto	Optical Fiber Multiplex Guidance	Aug. 8- Sep.24,1989	NEC
31.	Y. Moriya	ditto	Microwave Propagation Guidance	Aug. 9 - Sep. 7,1989	Tokai Univ.
32.	S. Fujikawa	ditto	Measurement Technic Guidance	Aug.24 - Sep. 7,1989	Anritsu Co.
33.	S. Doi	ditto	Transmission Line Guidance	Nov. 1 - Dec.15,1989	NTT
34.	T. Wakabayashi	ditto	Electromagnetic Wave Technology & Research Guidance	Aug. 1 - Aug.14,1990	Tokai Univ.
35.	Y. Moriya	ditto	Microwave Propagation Technology & Research Guidance	Dec. 5 - Dec.31,1990	Tokai Univ.
36.	T. Matura	ditto	Research Guidance on Sign Recognition	Jul.30 - Aug.15,1991	Tokai Univ.
37.	K. Eguchi	ditto	Installation & Operation of ISDN Protocol	Jan.25- Feb. 5,1991	Tekelek Co.
38.	T. Naganawa	ditto	Technology and R&G Guidance on ISDN Protocol	Feb.3 - Feb.22,1991	NTT
39.	Y. Moriya	ditto	Research Guidance on Microwave Propagation	Feb.10 - Feb.23,1991	Tokai Univ.

No.	Name	Field	Subject	Assigned Period	Organization
40.	K. Tokuda	Telecomm.	Installation of Workstation and Software Set-up	Feb.28 - Mar.12,1991	Tokodai Univ
41.	Y. Moriya	ditto	Radio Wave Propagation	Aug.16 - Sep. 5,1992	Tokai Univ.
42.	T. Matsuura	ditto	Digital Circuit	Aug.20 - Sep.13,1992	Tokai Univ.
43.	H. Kimura	ditto	Optical Communication	Nov.,1992	Tokai Univ.
44.	T. Wadabayashi	ditto	Electromagnetics	Dec.,1992	Tokai Univ.
45.	H. Okada	ditto	Information Communication	Jan.,1993	Tokai Univ.
46.	-	ditto	ISDN Protocol Technology	-	NTT

47.	M. Ito	Broadcasting	Measurement Technique	Jul.20 - Sep.19,1989	NHK
48.	H. Sekino	ditto	Measuring Equipment	Jul. 2 - Jul.28,1990	SONY
49.	Y. Iwahana	ditto	Measurement Technique	Jul.23 - Sep.22,1990	NHK
50.	Y. Nakahata	ditto	HDTV Technology	Aug.21 - Aug.28,1990	NHK
51.	K. Seo	ditto	HDTV Technology	Aug.21 - Aug.28,1990	NHK
52.	S. Kondo	ditto	Image Processing	Dec.16 - Dec.25,1991	Tokai Univ.
53.	K. Nio	ditto	Broadcasting Satellite	Jan. 9 - Jan.29,1992	TOSHIBA
54.	M. Teramoto	ditto	Filter Designing	Feb.10 - Feb.23,1992	Tokai Univ.
55.	T. Ohmura	ditto	HDTV	Feb.17 - Mar.16,1992	NHK
56.	Y. Takahashi	ditto	Gohst Reduction	Mar. 5 - Mar.28,1992	NHK
57.	N. Takahashi	ditto	Digital Signal Processing	Aug.20 - Sep. 2,1992	Tokai Univ.
58.	A. Ohya	ditto	Teletext	Aug.23 - Sep. 6,1992	NHK
59.	M. Imamura	ditto	Image Processing	Nov. 5 - Nov.23,1992	NHK

No.	Name	Field	Subject	Assigned Period	Organization
60.	K. Nio	Broadcasting	Broadcasting Satellite	Dec.,1992	NHK
61.	-	ditto	Ghost Reduction	Dec.,1992	NHK
62.	-	ditto	HDTV	Feb.,1992	NHK
63.	-	ditto	HDTV	Feb.,1992	NHK

64.	M. Waku	Mechanical Engineering	Manufacturing Process	Sep.24 - May. 8,1989	Shimazu Co.
65.	K. Nagase	ditto	Manufacturing Process	Apr.24 - May. 8,1989	Shimazu Co.
66.	K. Kojima	ditto	Internal Combustion Engine	Jun.20 - Jul. 3,1989	Daizen Co.
67.	N. Kitakaze	ditto	Internal Combustion Engine	Jun.20 - Jul. 3,1989	Daizen Co.
68.	M. Hayashi	ditto	Material Engineering	Aug. 1 - Aug.15,1989	Tokai Univ.
69.	K. Nishimoto	ditto	Manufacturing Process	Aug.20 - Sep. 3,1989	Tokai Univ.
70.	T. Morishita	ditto	Manufacturing Process	Sep.20 - Sep. 3,1989	Tokai Univ.
71.	H. Hashimoto	ditto	Lubrication Robotics	Aug.20 - Sep. 3,1989	Tokai Univ.
72.	M. Maeda	ditto	Thermodynamics	Jul.16 - Aug. 4,1990	Tokai Univ.
73.	K. Tsuruoka	ditto	Internal Combustion Engine	Jul.20 - Aug. 9,1990	Shimadzu Co.
74.	H. Kazuya	ditto	Material Engineering	Jul.27 - Aug. 8,1990	Tokai Univ.
75.	K. Nishimoto	ditto	Manufacturing Process	Aug.13 - Aug.25,1990	Tokai Univ.
76.	H. Hashimoto	ditto	Lubrication	Aug.13 - Aug.25,1990	Tokai Univ.
77.	S. Murakami	ditto	Thermodynamics	Aug.21 - Sep. 6,1990	Tokai Univ.
78.	N. Sato	ditto	Manufacturing Process	Mar. 8,1991	Tokai Univ.
79.	H. Waku	ditto	Manufacturing Process	Feb.,1991(2 weeks)	Nihon Denshi Co.
80.	K. Aoki	ditto	Fluid Mechanics	Jul.16 - Aug. 2,1991	Tokai Univ.

No.	Name	Field	Subject	Assigned Period	Organization
81.	N. Maeda	Mechanical Engineering	Thermodynamics	Jul.16 - Aug.11,1991	Tokai Univ.
82.	M. Hayashi	ditto	Material Engineering	Jul.30 - Aug. 8,1991	Tokai Univ.
83.	T. Iijima	ditto	Internal Combustion Engine	Jul.30 - Aug.19,1991	Tokai Univ.
84.	S. Murakami	ditto	Thermodynamics	Dec.16 - Jan.11,1991	Tokai Univ.
85.	M. Sato	ditto	Manufacturing Process	Dec.17 - Dec.30,1991	Tokai Univ.
86.	S. Aoki	ditto	Precision Engineering	Dec.17 - Dec.30,1991	Tokai Univ.
87.	M. Hayashi	ditto	Material Engineering	Jul.29 - Aug.18,1992	Tokai Univ.
88.	Y. Ochiai	ditto	Control Engineering	Jul.29 - Aug.18,1992	Tokai Univ.
89.	T. Iijima	ditto	Thermal Engineering	Jul.29 - Aug.26,1992	Tokai Univ.
90.	S. Murakami	ditto	Noise Control Engineering	Jul.29 - Aug.26,1992	Tokai Univ.
91.	K. Aoki	ditto	Fluid Engineering	Jul.29 - Aug.26,1992	Tokai Univ.
92.	T. Iijima	ditto	Thermal Engineering	Dec.,1992	Tokai Univ.
93.	S. Murakami	ditto	Noise Control	Dec.,1992	Tokai Univ.

3. Counterpart Personnel Training in Japan

FY 1988

1. Asst.Prof.Thawil Kingthong	Telecommunications	Jul.28 - Nov.20, 1988
2. Asst.Prof.Narong Haemmakorn	Telecommunications	Sep. 1 - Dec.22, 1988
3. Dr. Kanok Jainchirapongvej	Broadcasting	Oct. 2 - Nov.24, 1988
4. Dr. Kittima Mekhabunchakij	Data Communication	Jan.12 - Feb.28, 1989
5. Mr. Wicha Sripanyapong	Data Communication	Mar. 7 - May 23, 1989
6. Asst.Prof.Thaveesak Tescharoen	Mechanical Engineering	Oct.31 - Nov.30, 1988

FY 1989

1. Mr. Kemthong Nimsiri	Telecommunications	Aug.17 - Nov. 3, 1989
2. Asst.Prof.Monai Krairiksh	Telecommunications	Oct.24 - Dec.23, 1989
3. Asst.Prof.Sukon Nampetch	Telecommunications	Mar. 6 - Apr.14, 1990
4. Dr. Anan Chailertvanikul	Broadcasting	May 15 - Jul.14, 1989
5. Mr.Praiboon Pantarakpong	Data Communication	Jul.11 - Sep.12, 1989
6. Mr. Petch Suttinanondh	Data Communication	Mar.21 - Jun.29, 1990
7. Mr.Somchai Deemark	Data Communication	Mar.21 - Jun.16, 1990
8. Asst.Prof.Pornsak Attavanich	Mechanical Engineering	Mar.20 - Sep.30, 1990
9. Dr.Yothin Prempraneerach	Mechanical Engineering	Mar.20 - May 31, 1990

FY 1990

1. Asst.Prof.Tawil Puangma	Telecommunications	Jun. 3 - Sep. 2, 1990
2. Asst.Prof.Suchin Jamjod	Telecommunications	Jan.10 - Mar.11, 1991
3. Mr.Uthai Sritheeravirojana	Broadcasting	Jul.16 - Oct. 4, 1990
4. Mr.Pradit Vachrapibool	Broadcasting	Jan.16 - Mar. 3, 1991
5. Mr.Prasert Poomsirichayo	Data Communication	Jul.11 - Sep. 3, 1990
6. Asst.Prof.Akradech Sindhuphak	Mechanical Engineering	Oct. 1,1990 - Apr.15, 1991
7. Asst.Prof.Somchai Norasethasopon	Mechanical Engineering	Oct. 1,1990 - Apr. 1, 1991

FY 1991

1. Mr.Prasit Kampanyim	Mechanical Engineering	May 15,1991 - Jun.15, 1992
2. Assoc.Prof.Manoon Sukkasem	Telecommunications	Oct.23 - Dec.23, 1991
3. Dr.Kobchai Dejhan	Telecommunications	Nov.19 - Dec.19, 1991
4. Asst.Prof.Apinun Manyanon	Telecommunications	Feb.11 - Mar.25, 1992
5. Asst.Prof.Nikorn Sukutamantani	Broadcasting	Sep.30 - Dec.28, 1991
6. Asst.Prof.Vichai Surapat	Broadcasting	Jan.16 - Mar. 3, 1992
7. Mr.Watchara Chatwiriya	Data Communication	Sep.10,1991 - Mar.29, 1992
8. Miss Duangporn Sriwatana	Data Communication	Mar.10 - May 26, 1992

FY 1992

1. Asst.Prof.Monai Krairiksh	Telecommunications	May 25 - Jun.30, 1992
2. Dr.Suvepon Sitthichivapak	Telecommunications	Sep.15 - Oct.30, 1992
3. Mr.Chawalit Benjankaprasert	Broadcasting	-
4. Mr.Attasit Lasakul	Broadcasting	Jun.30,1992 - Feb.23, 1993
5. Dr.Voravat Limpoka	Data Communication	Jun. 7 - Jun.26, 1992
6. Mr.Akharin Khunkitti	Data Communication	Nov. 5,1992 - Dec.22, 1992
7. Mr.Chamlong Prabkeao	Mechanical Engineering	Jun. 2,1992 - Mar.31, 1993
8. Mr.Tawatchai Nakpipat	Mechanical Engineering	Dec.,1992

4. Equipment Provided

4-1. Telecommunications

JFY	Equipment	Price* (Thousand Yen)	Maintenance	Operation
1988	1.Optical/microwave measuring instrument	20,952	A	A
	2.Optical parts		A	B
1989	3.Optical transmission equipment	63,926 (included in the above)	A	A
	4.Microwave transmission equip.		A	A
	5.Measuring instruments for transmission system and others		4,845	A
1990	6.Measuring instruments for switching equipment	5,750	A	B
	7.Spare parts and accesories	5,510	A	C
1991	8.Digital PABX	27,439	A	A
	9.Digital circuits / μ -wave training kits	5,394	A	A
	10.ISDN simulator/monitor	34,224	A	B
	11.Workstation	11,124	A	B
	12.Measuring instruments and others	14,127	A	B
1992	13.Workstation	9,610	-	-
	14.Mobile telephone testing instrument	5,289	-	-
	15.Attendant Console for Digital PABX and spare parts	1,135	-	-
	16.Accesories and spare parts	1,013	-	-
	17.Others	(5,000)**	-	-
Total		(215,338)		

Remarks * Approximate only.
 ** Estimated value
 A :Excellent B :Good C :Normal D :Poor

4-2. Broadcasting

JFY	Equipment	Price* (Thousand Yen)	Maintenance	Operation
1988	1. Television equipments	3,349	A	B
	2. Video measuring instruments	8,098	A	A
	3. Audio measuring instruments	264	A	C
	4. Wireless equipments and measuring instruments	699	A	B
	5. Digital equipments and measuring instruments	3,759	A	A
1989	1. Television equipment	13,334	A	B
	2. Video measuring instruments	11,096	A	B
	3. Audio measuring instruments	3,907	A	C
	4. Wireless equipment and measuring equipment	15,419	A	B
	5. Digital equipment and measuring instruments	7,691	A	A
	6. Others	1,878	A	B
	7. Equipment carried by experts	451	A	A
1990	1. Equipment carried by experts	3,116	A	A
1991	1. Basic HDTV equipment	13,206	A	A
	2. Antenna basis and direction controller	2,028	A	A
	3. Work-station and others	11,138	A	B
	4. Equipment carried by experts	1,147	A	A
1992	1. HDTV equipments	34,575	-	-
	2. Television equipment	1,970	-	-
	3. Wireless equipment and measuring instruments	8,886	-	-
	4. Equipment carried by experts and others	(2,000)**	-	-
		(148,011)		

Remarks * Approximate only

** Estimated value

A: Excellent B: Good C: Normal D: Poor.

4-3. Data Communication

JFY	Equipment	Price* (Thousand Yen)	Maintenance	Operation
1988	1.NEC SYSTEM 610/HARDWARE	81,233	A	A
	2.NEC SYSTEM 610/SOFTWARE	48,098	A	A
	3.OTHERS	1,784	A	A
1989	1.NEC SYSTEM 610(Additional) /HARDWARE	68,683	A	A
	2.NEC SYSTEM 610(Additional) /SOFTWARE	13,657	A	B
	3.OTHERS	1,794	A	A
1990	1.PERSONAL COMPUTER etc	1,170	A	A
1991	1.NEC SYSTEM 610(Additional) /HARDWARE	7,772	-	-
	2.NEC SYSTEM 610(Additional) /SOFTWARE	5,818	-	-
	3.OTHERS	400	A	A
1992	1.SPARE PARTS	2,854	-	-
	2.OTHERS	400**	-	-
Total		(231,663)		

Remarks : * Approximate only

** Estimated Value

A : Excellent B : Good C : Normal D : Poor

4-4. Mechanical Engineering

JFY	Equipment	Price* (Thousand Yen)	Maintenance	Operation
1988	1. Universal testing machine	14,340	A	B
	2. CNC milling machine	14,415	A	A
	3. Engine performance testing apparatus	7,018	A	A
	4. Measuring instruments, Personal computer and others	55,727	A	A
1989	1. Gas analyzer	14,651	A	A
	2. Shrielen system	4,633	A	C
	3. Eddy current type dynamometer	3,286	A	A
	4. Sound measurement system	1,849	A	A
	5. FFT analyzer	2,795	A	B
	6. Personal computer, measuring system and others	32,186	A	B
1990	1. Scanning electron microscope	11,725	A	B
	2. Rotary bending fatigue testing machine	3,465	A	A
	3. CNC Lathe	4,950	A	B
	4. Milling machine	2,345	A	B
	5. Lathe	1,910	A	A
	6. Personal computer, measuring instruments and others	31,855	A	B
1991	1. Three-dimensional measuring system	7,700	A	C
	2. Robot	3,300	A	C
	3. Automatic control simulator	1,710	A	B
	4. Milling machine	2,740	A	C
	5. Motor, measuring instruments and others	16,057	A	C
1992	1. Fiberoptic laser velocimeter	10,540	-	-
	2. X-ray micro-analyzer	11,710	-	-
Total		(260,907)		

Remarks * Approximate only.
A :Excellent B:Good C:Normal D:Poor

I I I. O U T P U T S 1

1. NUMBER OF STUDENTS	23
2. TREND OF NUMBER OF STUDENTS AND STAFF SINCE 1961	24
3. UNIVERSITY ENTRANCE EXAMINATION RESULTS OF ENGINEERING STUDENTS (ACADEMIC YEARS 1988 - 1992)	26
4. NUMBER OF GRADUATES	32

1. Number of Students

(June 1992)

Faculty / Field of study	Bachelor's Degree				Master's Degree		Doctor's Degree	
	1	2	3	4	1	2	1	2
		Total			Total		Total	
Faculty of Engineering	971	990	543	477	2,981			
* Dept of Telecommunications Engineering	-	182	105	32	271			
* Dept of Computer Engineering	-	88	58	50	196			
* Dept of Mechanical Engineering	-	48	26	44	118			
* Dept of Industrial Technology	172	226	13	-	411			
- Electronics Technology(Day course)	44	78	-	-	122			
- Electronics Technology (Evening course)	42	36	10	-	88			
- Telecommunication Technology (Day course)	42	74	-	-	116			
- Telecommunication Technology (Evening course)	44	38	3	-	85			
Graduate School								
* Electrical Engineering						170	191	1
* Computer Science and Information Technology						40	53	
* Mechanical Engineering						25	9	
								17
								18
								-
								34

2. Trend of Number of Students and Staff since 1961

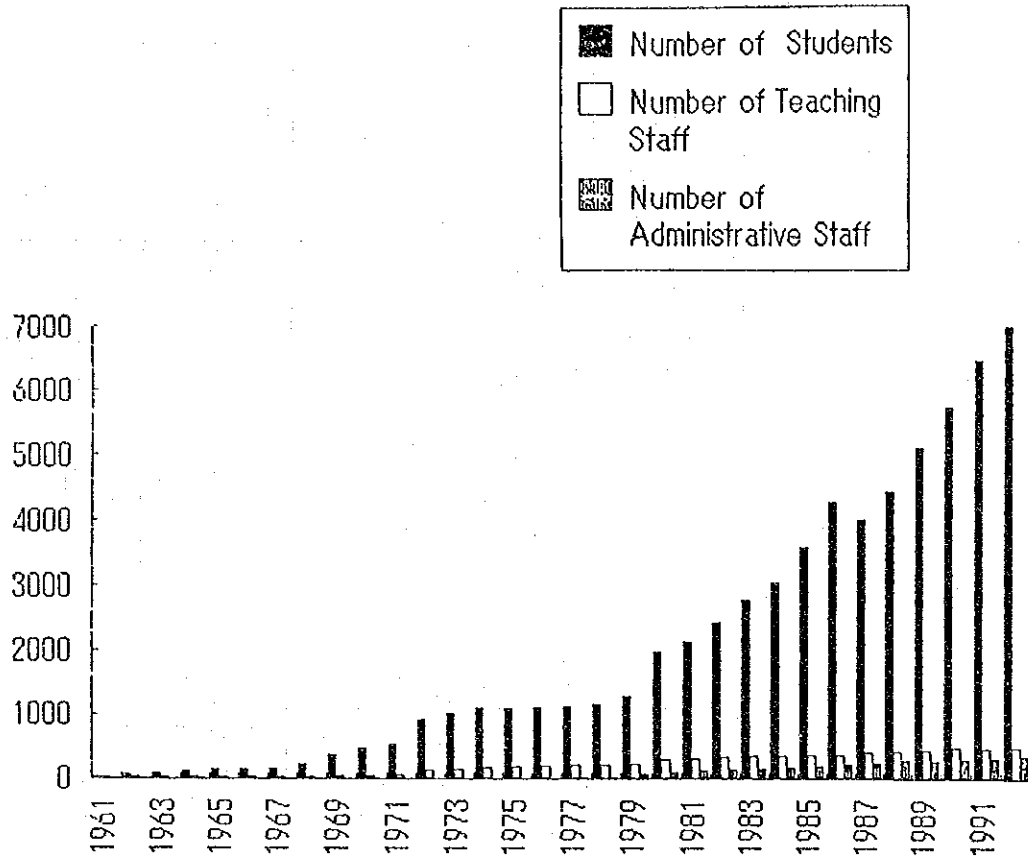
Academic Year	Number of Students	Number of Teaching Staff	Number of Administrative Staff
1961	23	20	-
1962	50	22	-
1963	85	23	-
1964	110	26	-
1965	135	28	-
1966	141	28	-
1967	154	29	-
1968	215	30	-
1969	357	32	-
1970	457	38	-
1971	515	46	-
1972**	909	127	-
1973	1008	138	-
1974	1094	160	-
1975	1099	174	-
1976	1103	192	-
1977	1115	207	12
1978**	1156	214	16
1979	1274	224	66
1980***	1964	285	91
1981	2124	302	123
1982	2425	337	141
1983	2762	342	152
1984	3030	354	169
1985	3566	368	190
1986	4263	364	217
1987	3987	399	230
1988	4416	415	271
1989	5070	428	269
1990	5688	468	288
1991	6390	466	304
1992	6928	492	346

Notes: * Faculty of Architecture joined KMITL.

** Faculty of Industrial Education and Science was established.

*** Faculty of Agricultural Technology joined KMITL.

2. Trend of Number of Students and Staff since 1961



3. National University Entrance Examination Results of Engineering Students
(Academic Years 1988-1992)

Fields	Academic Year									
	1988		1989		1990		1991		1992	
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
Telecommunications Eng.	438	331	470	362	456	329	470	349	447	345
Electrical Eng.	"	"	"	"	"	"	"	"	"	"
Electronics	"	"	"	"	"	"	"	"	"	"
Computer Eng.	"	"	"	"	"	"	"	"	"	"
Control Eng.	"	"	"	"	"	"	"	"	"	"
Instrumentation Eng.	"	"	"	"	"	"	"	"	"	"
Construction/Civil Eng.	383	307	"	"	"	"	"	"	"	"
Mechanical Eng.	"	"	"	"	"	"	"	"	447	339
Agricultural Eng.	"	"	"	"	"	"	323	213	342	289

Remarks : Full Marks = 600

Faculties with Highest Number of Applicants
National University Entrance Examination 1992

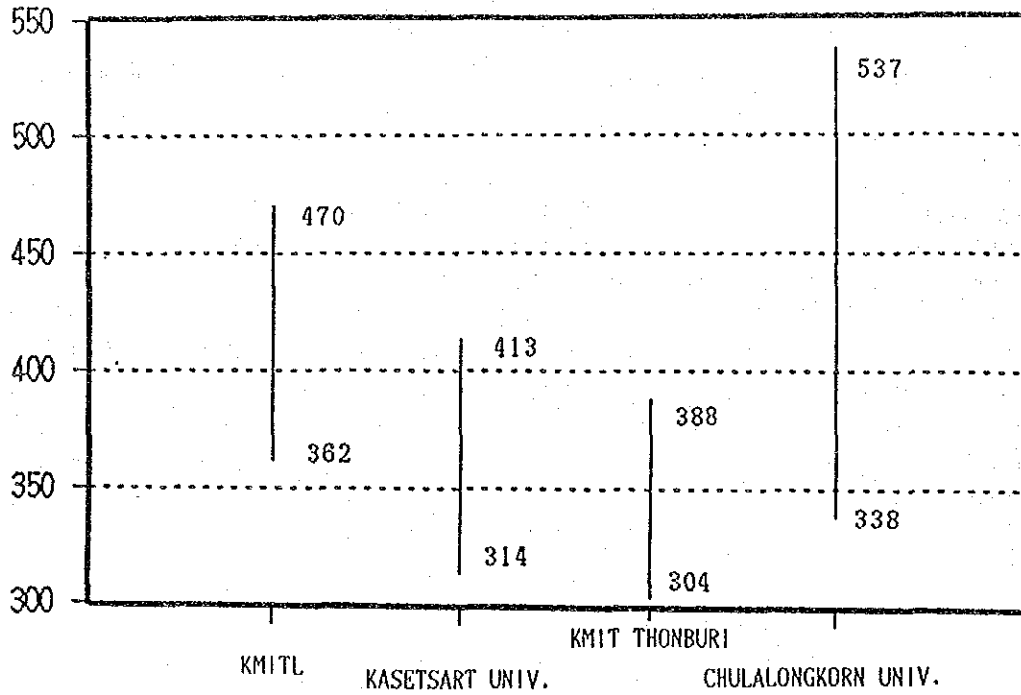
	Faculty	Institution	Number of Applicants
1	Engineering	KNITL	11,968
2	Engineering	Kasetsart University	11,453
3	Journalism	Thammasart University	9,068
4	Humanities(Mass communication)	Chieng Mai University	8,600
5	Engineering	KNITT	8,167
6	Engineering	Chulalongkorn University	7,791
7	Humanities(Mass communication)	Kasetsart University	5,899
8	Communication Arts	Chulalongkorn University	5,868
9	Engineering	Chiang Mai University	5,087
10	Engineering	Khon Kaen University	4,944

Admission and Applicants in the Field of Engineering
National University Entrance Examination 1992

	Institution	Number of Admission	Number of Applicants	Proportion
1	KMIT Ladkrabang	420	11,958	1:28
2	Kasetsart University	535	11,453	1:21
3	KMIT Thonburi	525	8,167	1:16
4	Chulalongkorn University	700	7,791	1:11
5	Chieng Nai University	260	5,087	1:20
6	Khon Kaen University	238	4,944	1:21
7	Thammasart University	150	4,114	1:27
8	KMIT North Bangkok	120	2,810	1:23
9	Prince of Songkha University	117	2,358	1:20
10	Mahidol University	120	1,706	1:14
11	Ubonrachatanee University	40	1,248	1:31

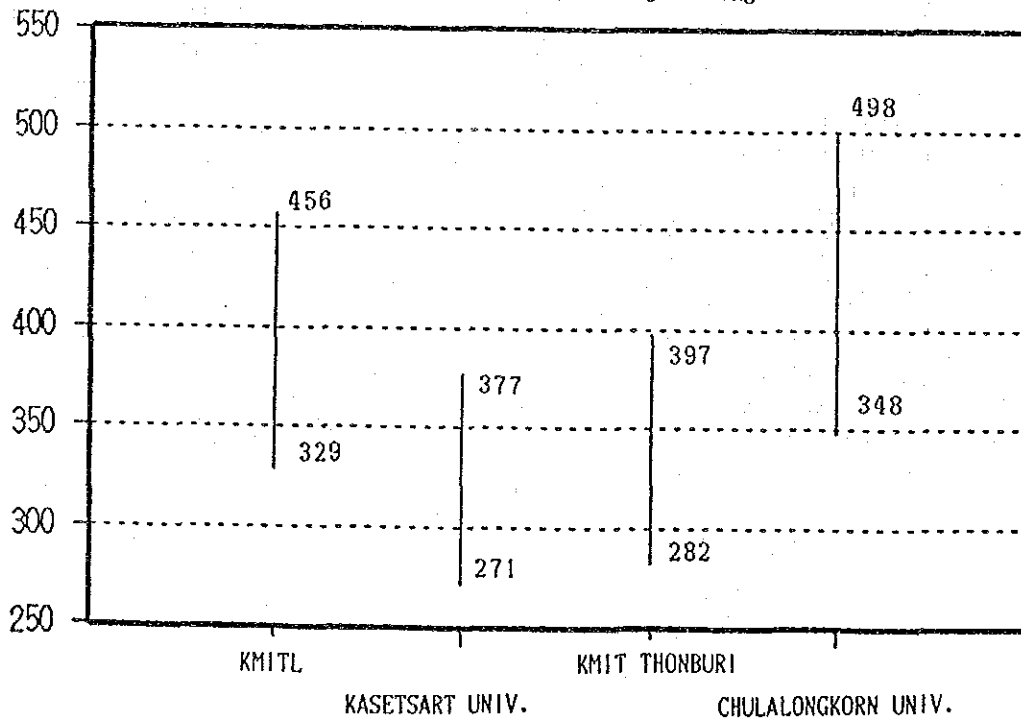
National University Entrance Examination 1989

Results for Faculty of Engineering



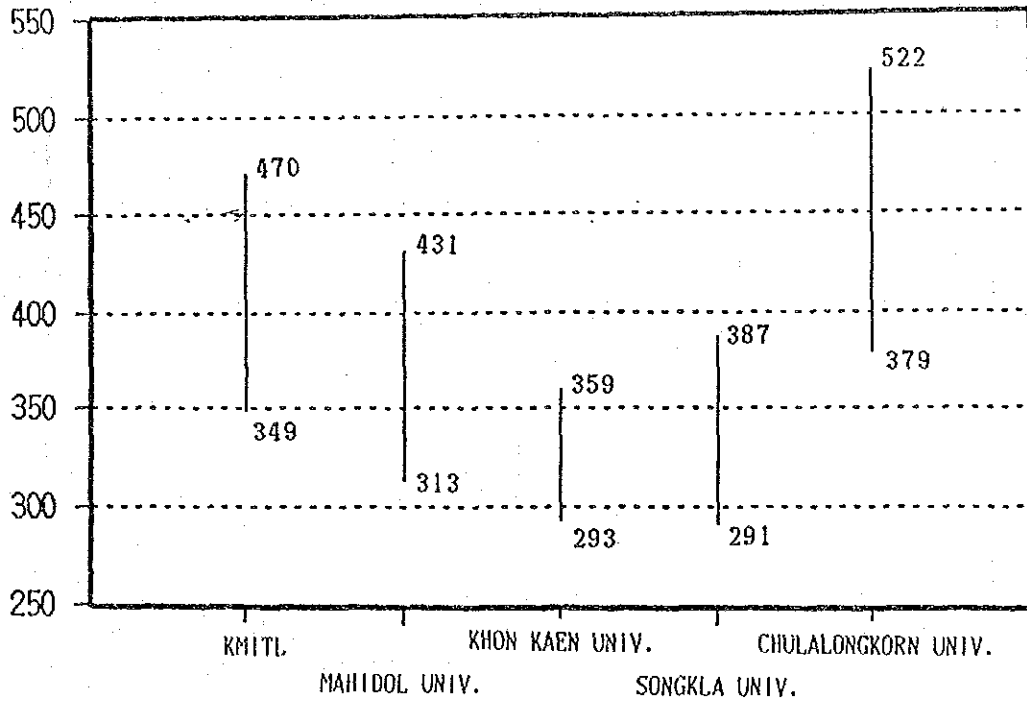
National University Entrance Examination 1990

Results for Faculty of Engineering



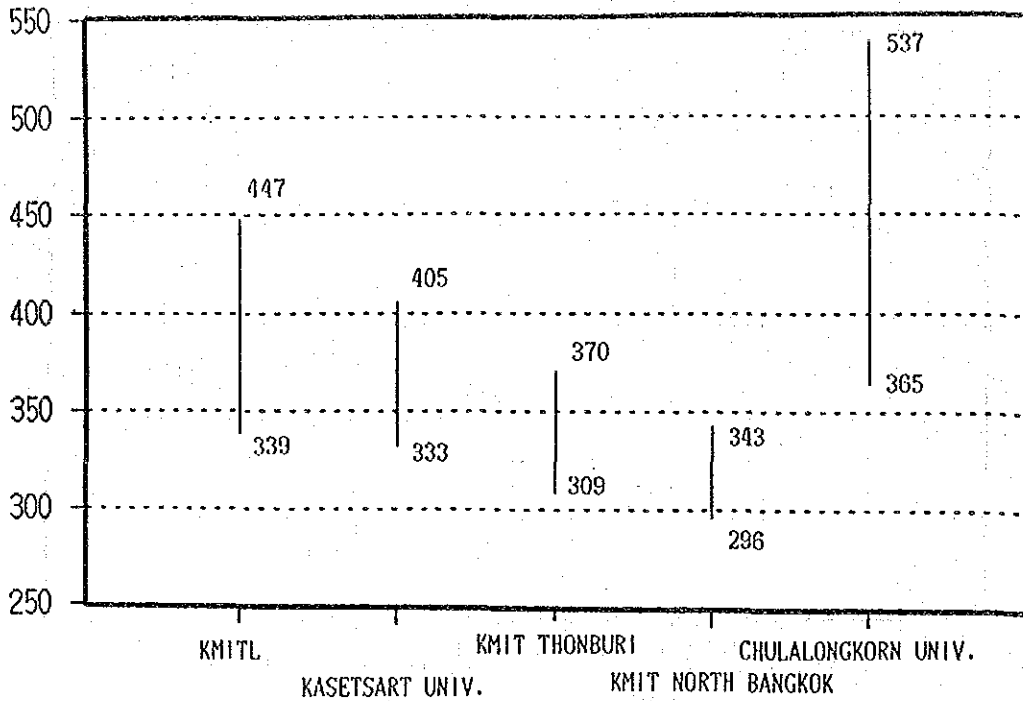
Full Marks = 600

National University Entrance Examination 1991
Results for Faculty of Engineering

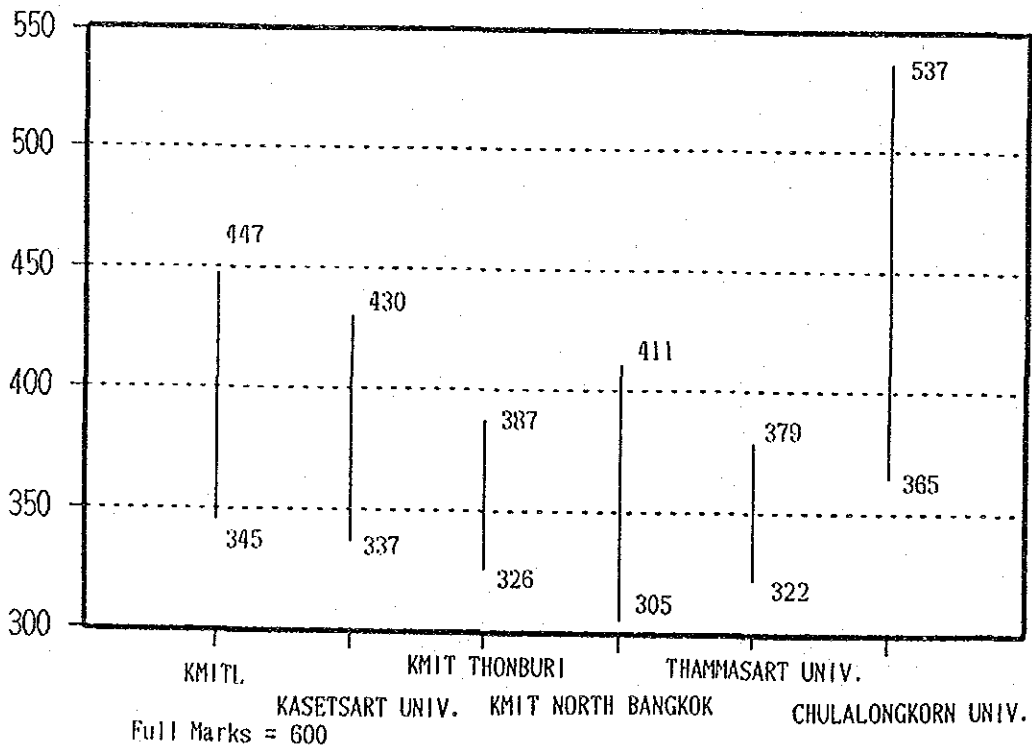


Full Marks = 600

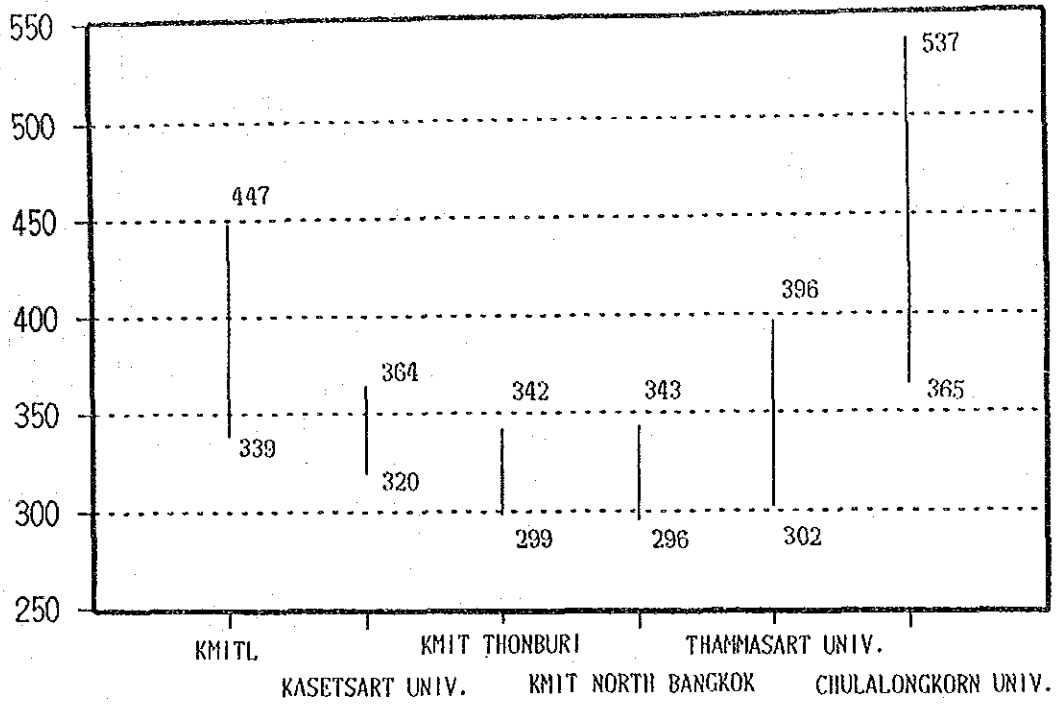
National University Entrance Examination 1992
Results for Mechanical Engineering



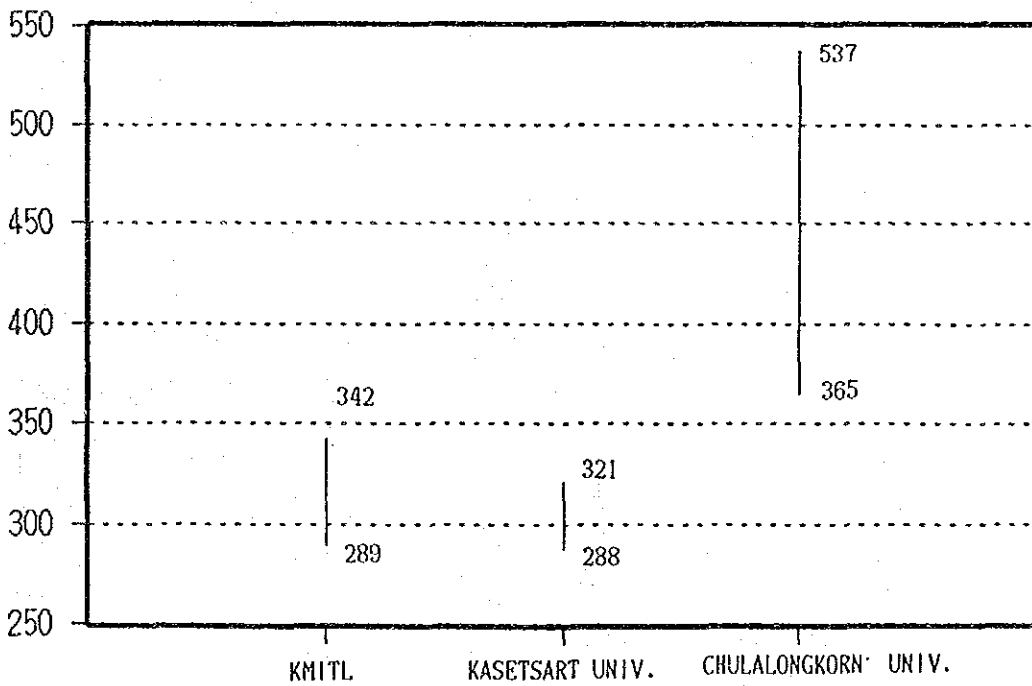
National University Entrance Examination 1992
Results for Electrical Engineering



National University Entrance Examination 1992
Result for Civil Engineering



National University Entrance Examination 1992
Results for Agricultural Engineering



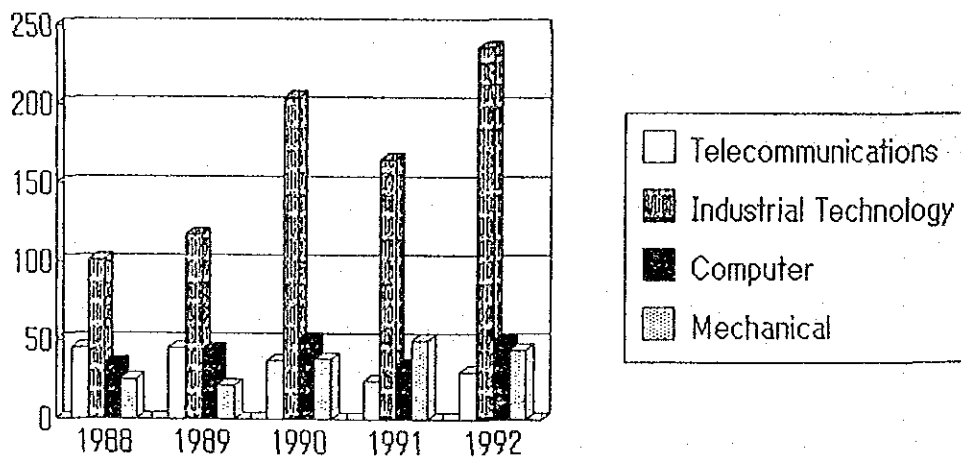
Full Marks = 600

4. Number of Graduates

Educational Level	Academic Year					Total
	1988	1989	1990	1991	* 1992	
Bachelor's Degrees						
• Dept of Telecommunications Engineering	45	45	37	24	30	181
• Dept of Industrial Technology	101	117	204	165	236	823
• Dept of Computer Engineering	35	44	51	34	50	214
• Dept of Mechanical Engineering	25	21	38	50	44	178
Master's Degrees						
• Electrical Engineering	15	9	14	27	30	95
• Mechanical Engineering	-	-	-	-	-	-
Doctor's Degree						
• Electrical Engineering	-	-	1	-	2	3
Grand Total	221	236	345	300	392	1,494

* Estimated

Number of Graduates / Bachelor's Degrees



III. OUTPUTS 2

1. TELECOMMUNICATIONS	34
2. BROADCASTING	49
3. DATA COMMUNICATION	59
4. MECHANICAL ENGINEERING	83

TELECOMMUNICATIONS

1. CURRICULUM	35
2. TEXTBOOKS PUBLISHED BY JICA SUPPORT	39
3. LIST OF TECHNICAL PAPERS	41
4. STAFF STUDYING IN DOCTOR/MASTER COURSE	46
5. STAFF INVOLVED IN RESEARCH AND TRAINING ABROAD	46
6. EDUCATIONAL BACKGROUND OF STAFF	47
7. RESEARCH FUNDS	47

1. Curriculum

Subject	Credit (Lecture-Practice)	Revised/Set-up Academic Year	Remarks
1st year			
(1st semester)			
- Engineering Laboratory I	1(0-3)	1989	Physics Lab. I in the old curriculum
- Electrical Circuit Analysis	3(0-3)		
- Mechanics	3(3-0)		
- Mathematics I	6(6-0)		
- Language(English/Japanese)	3(2-2)	1989	new
- 2 Electives of Humanity	4(4-0)	1989	new

20(18-5)			
(2nd semester)			
- Electromagnetics	3(3-0)		
- Engineering Laboratory II	1(0-3)	1989	Physics Lab. II in the old curriculum
- Quantum Physics	2(2-0)		
- Thermodynamics	3(3-0)	1989	
- Engineering Drawing	1(1-2)	1989	Combining Eng. Drawing I, II in the old curriculum
- Introduction to Computer Science	2(2-0)	1989	new
- Digital Circuit & Logic Design	3(3-0)		
- Mathematics II	3(3-0)		
- Language(English/Japanese)	3(2-2)	1989	new

21(19-7)			
2nd Year			
(1st semester)			
- Engineering Laboratory III	1(0-3)		
- Microprocessor & Microcomputer	3(3-0)	1990	new
- Principle of Computer Programming	2(2-0)	1990	Programming Language I, II in 1st & 2nd semester of 1st year in the old curriculum
- Solid and Fluid Mechanics	3(3-0)	1990	new
- Material Science	3(3-0)	1990	new
- Mathematics III	3(3-0)		
- 2 Electives from under •Fundamental of Electrical Machines	6(6-0)	1990	new

Subject	Credit (Lecture-Practice)	Revised/Set-up Academic Year	Remarks
<ul style="list-style-type: none"> •Fundamental of Electronics •Fundamental of Civil Engineering •Hydraulics 			

21(18-3)			
(2nd semester)			
- Engineering Electromagnetics	3(3-0)	1990	1st semester of 2nd year in the old curriculum
- Network Theory	3(3-0)	1990	--- ditto ---
- Communication engineering	3(3-0)		new textbook in 1992
- Outside Plant Engineering	3(3-0)	1990	divided from Multiplex Sys. and Outside Plant in the old curriculum
- Electronic Engineering	3(3-0)		Engineering Electronics I, II in the old curriculum
- System and Control Engineering	3(3-0)	1990	new

18(18-0)			
3rd Year			
(1st semester)			
- Microwave Engineering	3(3-0)	1991	Introduction to radio & Microwave Engineering in the old curriculum
- Telex and Telephone Engineering	3(3-0)	1991	combining Introduction to Telephone & Telegraphs and Telephone & Telegraph Engineering
- Communication Networks and Transmission Lines	3(3-0)		
- Radio Wave Propagation	3(3-0)		
- Telecommunication Lab. I	3(3-0)	1991	revised
- Microprocessor Application	3(3-0)		
- Electives in Humanity	2(2-0)		

19(17-6)			
(2nd semester)			
- Microwave Communication	3(3-0)		revised, new textbook
- Digital Switching System	3(3-0)	1991	new, new textbook
- Digital Signal Transmission System	3(3-0)		revising Multiplex System & Outside Plant, new textbook

Subject	Credit (Lecture-Practice)	Revised/Set-up Academic Year	Remarks
- Antenna Engineering	3(3-0)	1991	new
- Radio Engineering	3(3-0)	1991	divided from Introduction to Radio & Microwave
- Telecommunication Lab. II	2(0-6)		revised
- Industrial Training	1		2nd year-2nd semester in the old curriculum

18(15-6)

4th Year

(1st semester)

- 3 Engineering electives	9(9-0)	1992	4 Engineering Electives in the old curriculum
- 1 Free Electives	3(3-0)	1992	new
- Project I	3(0-9)		
- Electives in Social Science	2(2-0)		

17(14-9)

(2nd semester)

- 2 Engineering Electives	6(6-0)	1992	4 Engineering Electives in the old curriculum
- Project II	3(0-9)		
- 2 Electives in Social Science	4(4-0)	1992	1 Electives in the old curriculum

13(10-9)

<Engineering Electives>

- Antenna Design	3(3-0)		
- Telephone Network Planning and Design	3(3-0)	1992	title is changed, improved new textbook
- Microwave Theory and Techniques	3(3-0)		
- Satellite Communication	3(3-0)	1990	revised, new textbook
- Optical Communication	3(3-0)	1990	revised, new textbook
- Data Communication	3(3-0)	1992	revised, new textbook
- Statistical Communication	3(3-0)	1992	revised, new textbook
- Telecommunication Circuit Design	3(3-0)		
- Television Receivers	3(3-0)		
- Television Broadcasting	3(3-0)		

Subject	Credit (Lecture-Practice)	Revised/Set-up Academic Year	Remarks
<Engineering Electives>			
- Rader and Radio Navigation Aides	3(3-0)	1990	new textbook
- Principles of Network Design	3(3-0)		
- Transmission Engineering	3(3-0)		
- Broadcasting Engineering	3(3-0)		
- Digital Communication System	3(3-0)		
- Computer in Communication	3(3-0)	1992	revised
- Mobile telecommunication	3(3-0)		
- Modern Local Communication Architecture	3(3-0)	1991	new textbook
- DSP Based Testing	3(3-0)	1991	new
- Electrical Noise on Communication and Electronic System	3(3-0)	1991	new
- MOS VLSI Circuit for Telecommunications	3(3-0)	1991	new
- Design of Arithmetic Units DSP	3(3-0)	1991	new
- Fast Algorithm for DSP	3(3-0)	1991	new

2. Textbooks Published by JICA Support

Title	Author	Published year	Course to be used (year/semester)
1. Optical Fiber Cable Measurement	Mr.Apinun	1989	Telecommunication Lab. I, II (3 / 1, 2)
2. Optical Fiber Cable Splicing & Measurement	Mr.Kemthong	1989	Telecom. Lab. II (3 / 2)
3. Satellite Communication	Mr.Narong	1989	Satellite Communication (4 / 2)
4. Telex & Faximile	Mr.Sukon	1989	Telex & Telephone Engineering (3 / 2)
5. Marine Rader	Mr.Apinun	1989	Radar & Radio Navigation Aids (4 / 2)
6. Electromagnetics	Mr.Narong	1989	Engineering Electromagnetics (2 / 2)
7. Digital Microwave Measurement	Mr.Narong	1989	Telecom. Lab. I,II (3 / 1,2)
8. Radio & Cable Transmission Laboratory Guidebook	Staff	1989	Telecom. Lab. I,II (3 / 1,2)
9. Digital Microwave Radio System	Mr.Narong	1989	Microwave Communication (3 / 2)

10.Optical Fiber Communication Theory(1)	Mr.Apinun	1990	Optical Communication (4 / 1)
11.Digital Transmission Technology	Mr.Tawil K.	1990	Digital Signal Transmission Sys. (3 / 2)
12.2M PCM MUX Measurement	Mr.Tawil K.	1990	Telecom. Lab. I,II (3 / 1,2)
13.8M Digital MUX Equipment & 8M Optical Line Terminating Equipment & Measurement	Mr.Tawil K.	1990	Telecom. Lab. I,II (3 / 1,2)

14.Outside Plant Engineering	Mr.Kemthong	1991	Outside Plant Engineering (2 / 2)
15.Telecommunications-Circuit Design	Mr.Tawil P.	1991	Telecommunications Circuit design (4 / 2)
16.Outside Plant Laboratory Guidebook	Mr.Kemthong	1991	Telecom. Lab. I (3 / 1)
17.Communication Systems	Dr.Wiwat	1991	Communication Engineering (2 / 2)
18.Electromagnetics	Mr.Monai	1991	Electromagnetics (for other Dept.)
19.High-speed Local Area Network Architecture	Mr.Suvipol	1991	Modern Local Communication Network Architecture (4 / 1)
20.Optical Fiber Communication Theory(2)	Mr.Apinun	1991	Optical Communication (4 / 1)

Title	Author	Published year	Course Name to be used (year/semester)
21.Communication Theory	Mr.Tawil K.	1991	Communication Theory (for other Dept.)
22.Digital PABX Laboratory Guidebook	Mr.Tawil P.	1991	Telecom. Lab. II (3 / 2)
23.Statistical Communication	Dr.Kobchai	1991	Statistical Communication (4 / 2)

24.Digital Switching Technology	Mr.Tawil P.	1991	Digital Switching System (3 / 2)
25.Optical Device	Mr.Apinun	1992	Optical Communication (4 / 1)
26.ISDN Protocol Technology & Laboratory Guidebook	Mr.Tawil P.	1992	Computer in Communication (4 / 1)
27.Introduction of ISDN Technology	Mr.Tawil P.	1992	Computer in Communication (4 / 1)
28.Digital PABX	Mr.Tawil P.	1992	Digital Switching System (3 / 2)
29.Digital Microwave Communication Engineering	Mr.Narong	1992	Microwave Communication (3 / 2)
30.Telecommunications Network Planning	Mr.Manoon	1992	Telecommunications Network Planning & Design (4 / 1)
31.Optical Fiber Communication Laboratory Guidebook	Mr.Apinun	1992	Telecom. Lab. I,II (3 / 1,2)
32.Principles of Data Communication	Mr.Pramote/ Dr.Wiwat	1992	Data Communication (4 / 2)
33.Data Communication System	Dr.Wiwat	1992	Data Communication (4 / 2)
34.Q & A in Optical Fiber Technology	Mr.Apinun	1992	Optical Communication (4 / 1)
35.Radio Engineering	Mrs.Nipa	1992	Radio Engineering (3 / 2)

3. List of Technical Papers

4-1. Number of Technical Papers Presented

Academic Organization	1988	1989	1990	1991	1992	Total
1. International Journals and/or Proceedings	1 (5%)	2 (10%)	1 (5%)	2 (9%)	2 (9%)	8
2. International Conference Papers	-	-	1 (5%)	4 (18%)	9 (41%)	14
-----	-----	-----	-----	-----	-----	-----
3. Journals and/or Proceedings in Thailand	-	-	2 (10%)	-	3	5
4. Conference Papers in Thailand	4 (19%)	7 (33%)	16 (80%)	27 (123%)	2	56
Total number of papers	5 (24%)	9 (43%)	20 (100%)	33 (150%)	16	83
Number of research staff	21	21	20	22	22	-

Remarks : • Number in the bracket shows (number of papers/number of staff) in %.
 • Number of research staff includes the staff abroad.

4-2. List of Technical Papers

1988

1. A. Rathie, C. Surawatpunya "Software Development for Antenna Characteristics Display" 11st Electrical Engineering Conference, pp. 1-32, 16-17 Dec. 1988.
2. C. Chatreekul, C. Surawatpunya, "Measurement and Elimination of RFI from Over Head High Voltage Power Line", *ibid*, pp. 2-2, 16-17 Dec. 1988.
3. W. Kiranon, C. Loecharasaramdee, "Integrator with Extended Time Constant", *ibid*, pp. 5-22, 16-17 Dec. 1988.
4. V. Riewruja, W. Surakamponorn, C. Surawatpunya, "Theory and Application of Current Limiting Circuit", *ibid*, pp. 5-23, 16-17 Dec. 1988.
5. W. Surakamponorn, P. Thitimajshima, "Integrable Electronically Tunable Current Conveyors", *IEE Proc. Part G.*, Vol. 135, No.2, pp. 71-77, 1988.

1989

1. W. Kiranon, P. Wardkien, C. Loecharasaramdee, "Simple 4-phase Envelope Detector", 12th Electrical Engineering Conference, pp. 142-151, 16-17 Nov. 1989.
2. K. Panichprathompong, M. Krairiksh, W. Kiranon, "PZN Diode Phase Shifter", *ibid*, pp. 152-161.
3. W. Kiranon, P. Wardkien, C. Loecharasaramdee, "Novel Hilbert Transform Detector", *ibid*, pp. 162-171.
4. M. Krairiksh, W. Kiranon, K. Panichprathompong, "Bandwidth Enhancement of Coaxial Collinear Antenna", *ibid*, pp. 172-181.
5. W. Kiranon, P. Wardkien, C. Loecharasaramdee, "Period-to-Voltage Converter", *ibid*, pp. 604-611.
6. W. Kiranon, P. Wadkien, C. Loecharasaramdee, "Frequency Independent Quadrature Phase Shifter", *ibid*, pp. 612-621.
7. W. Kiranon, P. Wardkien, C. Loecharasaramdee, "OTA Frequency Multiplier", *ibid*, pp. 622-631.
8. C. Surawatpunya, K. Saetang, "A Microstrip Waveguide Gunn Oscillator", *Int. J. of Electronics*, vol. 66, 1989.
9. K. Dejhan, *IEEE Trans. Consumer Electronics*, vol. 35, no. 4, Nov. 1989.

1990

1. M. Krairiksh, T. Wakabayashi, W. Kiranon, "Analysis of Interior Electromagnetics Fields from a Slot on a Perfectly Conducting Sphere", *Proc. of the 3rd Asia-Pacific Microwave Conference*, Tokyo, Japan, pp. 1182-1186, Sept. 18-21, 1990.
2. M. Krairiksh, K. Panishpathompong, S. Damanop, A. Jaidee, "Magnetron Power Control for Microwave Heating", *The Conference of the Engineering Institute of Thailand*, Nov. 1-4, 1990.
3. K. Nimsiri, "Low-loss Splicing Technique for Optical Fiber", *the Conference of the Engineering Institute of Thailand*, Nov. 1-4, 1990.
4. K. Dejhan, C. Nokyoo, S. Junnapiya, "Multi-purpose Open-drying", *Proc. of the 5th Technology for Developing Country*, pp. 1-37-144, Khonkaen University, Khonkaen, August 16-17, 1990.
5. K. Dejhan, W. Surakamponorn, "VLSI Designs", *Proc. of the 16th Conference on Science and Technology of Thailand*, Oct. 25-27, 1990.

6. W. Surakamponorn, V. Riewruja, K. Dejhan, K. Kumwashar, "CMOS Current Conveyor", The 13th Electrical Engineering Conference, Chienmai University, Chienmai, Nov. 8-9, 1990.
7. T. Trisuvannawat, F. Cheevasuvit and K. Dejhan, "Band-stop Recursive Digital Filter with Maximally Flat Magnitude and Group Delay", *ibid.*
8. P. Sanaolump, P. Buntra, T. Paungma, "Construction of a Mixed Variable Signal Generator", *ibid.*
9. P. Sanaolump, P. Buntra, T. Paungma, "Telephone Controlling System", *ibid.*
10. P. Sanaolump, P. Buntra, T. Paungma, "Studies of Optical Path for PABX", *ibid.*
11. W. Kiranon, P. Wardkien, J. Lertjarataramdee, "A New Analog Divider Circuit", *ibid.*
12. W. Kiranon, N. Kamprasert, "A Simple Capacity Measurement", *ibid.*
13. W. Kiranon, P. Wardkien, J. Lertjarataramdee, "A Simple Difference-phase Measurement Using Integrator Circuit", *ibid.*
14. W. Kiranon, P. Wardkien, J. Lertjarataramdee, "A New Logarithmic Amplifier", *ibid.*
15. W. Kiranon, P. Wardkien, J. Lertjarataramdee, "A New frequency to Voltage Converter Circuit", *ibid.*
16. W. Kiranon, N. Kamprasert, "Calculation of Characteristic Impedences of Micro-strip Line Using Field Chart", *ibid.*
17. A. Surasit, M. Krairiksh, J. Lertjarataramdee, "Analysis of Yagi-dipole Fixing the Distribution of Two Current-term", *ibid.*
18. K. Dejhan et al., "Design of a Low-power 32k CMOS Programmable Delay Line Memory", *IEEE J. Solid-state Circuits*, vol. 25, no.1, Feb., 1990.
19. T. Paungma, P. Buntra, "Development of Rainfall Intensity Recorder for Thailand", *Engineering Journal, Engineering Institute of Thailand*, vol. 43, 1990.
20. T. Paungma, P. Buntra, "Development of Rainfall Intensity Recorder for Thailand", *Thailand Engineering Journal, The Engineering Institute of Thailand*, pp. 73-76, vol.2 no. 43, 1990.

1991

1. W. Thongtun, K. Dejhan, S. Junnapiya, "A New Design Technique for Addressable Fire Detector", *Proc. of the 29th Kasetsart University Annual Conference*, pp. 701-708, 4-7 Feb. 1991.
2. M. Krairiksh, K. Panichpathompong, "Interior Fields of Slot on Sphere", pp. 687-699, *ibid.*
3. P. Sanaolump, P. Buntra, T. Paungma, "To Record the Data of the Amount of a High Accuracy the Moment Rain Fall due to the Time by a Microcomputer", *Proc. of Electrotechnology '91, Engineering Institute of Thailand*, pp. 107-116, 13-26 May 1991
4. P. Buntra, P. Sanaolump, T. Paungma, "Body Check Signal Transmitter and Receiver System Via Telephone Network", pp. 264-273, *ibid.*
5. W. Kiranon, P. Wardkien, "A Volt Meter to DC Meter Adapter", pp. 286-297, *ibid.*
6. S. Thitimutha, K. Dejhan, W. Surakamponorn, S. Junnapiya, S. Nampetch, "A Current Conveyor-Based Integrated Instrumentation Amplifier", pp. 310-317, *ibid.*
7. K. Dejhan, B. Chalermpanich, S. Unnapiya, S. Khuntaweetep, "CMOS VLSI Latch Circuit Optimization Based on $2\mu\text{m}$ Process Gate Length", pp. 318-337, *ibid.*
8. M. Krairiksh, K. Panichpathompong, "Rectangular Planar Phased Array", pp.409-421, *ibid.*
9. W. Thongtun, K. Dejhan, S. Sdangrith, S. Junnapiya, S. Nampetch, "A New Design Technique for Digital Signal Transmission Based on Single Pair Transmission Line without Power Supply at Receiver End", pp. 409-421, *ibid.*
10. W. Surakamponorn, V. Riewruja, K. Kumvachara, K. dejhan, "An Accurate CMOS-Based Current Conveyors", *IEEE Trans. on Instrumentation and Measurement*, Aug., 1991.

11. T. Trisuwannawat, F. Cheevasuvit, K. Dejhan, "A Design Technique of Linear Phase Recursive Digital Filter with Controllable Magnitude at an Arbitrary Specified Frequency", proc. 1991 IEEE Int. Symp. on Circuits and Systems, pp. 2435-2438, Singapore, 11-14 June, 1991.
12. F. Cheevasuvit, K. Dejhan, T. Trisuwannawat, C. Vangviwattana, S. Junnapiya, "Boolean Expression for Edge Detection in Binary Images", Proc. ENTECH '91, Engineering Institute of Thailand, 31 Oct.-3 Nov., 1991.
13. T. Puangma, P. Buntra, M. Sukkasem, "Telephone Recording and Signalling", *ibid.*
14. T. Puangma, P. Sanaolump, M. Sukkasem, "Telephony Commander", *ibid.*
15. T. Puangma, I. Arungsrisangchai, Y. Moriya, "Analysis of Effect of Microwave Signal due to Rain at 20 GHz in Thailand", *ibid.*
16. M. Sukkasem, T. Puangma, I. Arungsrisangchai, "Research and Development of Mobile Telephone in Thailand", *ibid.*
17. W. Kiranon, P. Wardkien, "Analog RC Meter", *ibid.*
18. P. Juserewong, C. Vangviwattana, F. Cheevasuvit, K. Dejhan, "A High-Pass Recursive Digital Filter with Improved Passband Magnitude Response and Remained Maximally Flat Group Delay", *ibid.*
19. M. Krairiksh, T. Wakabayashi, W. Kiranon, "Characteristic of Microwave Applicator Using Slots on a Sphere", Digest of World Congress on Medical Physics and Biomedical Engineering", Kyoto, Japan, pp. 423, 7-12 July, 1991.
20. W. Kiranon, P. Wardkien, C. Loescharataramdee, "Simple Frequency / Voltage Converter with Low Output Ripple", *Electronic Lett*, pp. 205-206, 31 Jan. 1991.
21. F. Cheevasuvit, K. Dejhan, V. Tipsuwanporn, T. Trisuwannawat, "Multispectral Image Segmentation by Applying Graph Theory onto the First Principal Component Image", Proc. of Asian Conf. on Remote Sensing, Singapore, Nov. 1991.
22. J. Ngarmnil, S. Jantarung, F. Cheevasuvit, K. Dejhan, "False Colour Composit Display of Multiband Images on Personal Computer Using Cubic Colour Block Techniques", *ibid.*
23. K. Dejhan, S. Limpaihoon, S. Junnapiya, S. Khuntaweethep, "A New Integral Composit of Modified Field-Effect Transistor with Improved Dynamic Performance", The 14th National Electrical Engineering Conference, Prince of Songkla University, 7-8 Nov. 1991.
24. P. Julserivong, F. Cheevasuvit, T. Trisuwannawat, K. Dejhan, "A Maximally Flat Group Delay, Sand-Elimination Recursive Digital Filter with Improved Passband Magnitude Response", *ibid.*
25. S. Sithicheevapak, "New Collision Resolution Algorithm for High Speed Contention Ring Protocol", *ibid.*
26. W. Kiranon, P. Wardkeen, "Integrator with Large Time Constant", *ibid.*
27. T. Matsuura, W. Kiranon, P. Wardkeen, "Handwriter Identification Based on Handwriting Motion", *ibid.*
28. S. Kosalwit, K. Panichpratompom, "Parabolic Cylindrical Antenna for 479-493.5 MHz Cellular Telephone System", *ibid.*
29. K. Vayupak, M. Krairiksh, P. Noiram, S. Kosalwit, "Planner Slot Array Near-Field Analysis", *ibid.*
30. M. Krairiksh, K. Vayupak, S. Kosalwit, P. Noiram, "A Concentric Conducting Spherical Cavity", *ibid.*
31. P. Sanaolump, I. Arungsridangchai, T. Puangma, "Frequency to Voltage Converter for Highly Accurate Rain-Guage Measurement", *ibid.*
32. S. Wilasuan, I. Arungsrisangchai, T. Puangma, "Designation of Cellular Mobile Telephone System", *ibid.*
33. P. Buntra, M. Sukkasem, T. Puangma, "Time Slot Switching Circuit for Integrated Services in DPBX", *ibid.*

1992(as of the end of September)

1. T. Paungma, N. Hemmakorn, Y. Moriya, M. Teramoto, "Scintillation Characteristics as Seen in Ku Band Observed in Bangkok", Proc. of The 13th International Telecommunication Symposium (ITS'92), Taiwan, Feb. 27-29, 1992.
2. Y. Moriya, E. Shibuya, N. Hemmakorn, A. Manyan, "Method of Measuring Field Intensity of Satellite Signals Determined from Carrier to Noise Ratio", *ibid.*
3. K. Dejhan, F. Cheevasuvit, T. Trisuwannawat, M. Kaneko, "An Optimum Dual-mode Transposition Register Array Design for DCT in HDTV Applications", IEEE 1992 Digest of Technical Paper of International Conference of Consumer Electronics, pp. 294-295, Illinois, June 2-4, 1992.
4. K. Dejhan, F. Cheevasuvit, T. Trisuwannawat, M. Kaneko, "A Versatile Optimum Dual-mode Transposition Register Array Design for HDTV Applications", to be published in IEEE Trans. on Consumer Electronics.
5. K. Dejhan, F. Cheevasuvit, V. Tipsuwanporn, T. Trisuwannawat, "Analog Operation in CMOS Latch Circuit for Reducing Dynamic Power Dissipation", Proc. of the 35th Midwest Symposium on Circuit and Systems, Washington, D.C., Aug. 9-12, 1992.
6. K. Dejhan, F. Cheevasuvit, T. trisuwannawat, V. Tipsuwanporn, "A Bipolar Simple Integrable Sinusoidal Oscillator", *ibid.*
7. T. Matsuura, K. Ikeda, W. Kiranon, "Writer Identification Method Based on Impulse Response of Writing Motion System", Proc. of The 2nd Singapore International Conference on Image Processing(ICIP'92), Singapore, Sept. 7-11, 1992.
8. M. Krairiksh, W. Kiranon, T. Wakabayashi, "Microwave Applicator Using Two Slots on Sphere", Proc. of The 1992 Asia-Pacific Microwave Conference(APMC'92), Australia, Aug. 11-13, 1992.
9. F. Cheevasuvit, K. Dejhan, T. Tanapanich, D. Lisawadiratanakul, "Cloud Cover and Cloud Shadow Removing Based on 2-dimensional Histogram", Proc. of 13th Asian Conference on Remote Sensing, Ulaanbaatar, Mongolia, Oct. 7-11, 1992.
10. F. Cheevasuvit, K. Dejhan, S. Chitwong, "Seam Removal from Colour Mosaicking of MOS-1 MESSAR Images", *ibid.*
11. F. Cheevasuvit, K. Dejhan, A. Somboonkaew, "Edge Enhancement Using Transform of Subtracted Smoothing Image", *ibid.*
12. W. Thongtun, K. Dejhan, S. Junnapiya, "A New Design Technique for Addressable Fire Detector", Proc. of NECTEC Journal, June, 1992.
13. J. Chanwutitum, K. Dejhan, W. Leelakiatsakul, "An Application of LOTUS 1-2-3 to Digital Data Logger Processing Technique", to be published in Ladkrabang Engineering Journal, 1992.
14. K. Dejhan, S. Junnapiya, T. Weerakiatsunthorn, "A Design of Latch-based Memory Transposition for VLSI in DCT Application", to be published in Ladkrabang Engineering Journal, 1992.
15. T. Paungma, S. Wilasuwat, "Cell Site Selection and System Design for Cellular Mobile Telephone", Proc. of ENTECH'92, Engineering Institute of Thailand, Nov. 1992.
16. E. Wimonchat, M. Sukkasem, I. Arungsrisangchai, "Analysis of User-Network Interface for ISDN System", *ibid.*

4. Staff Studying in Doctor/Master Course

Staff Name	Destination	Duration	Master /Doctor	Subject	fellowship by
1. Mr.Suttichai	TIT(Japan)	1989-1995	D	Laser for optical light source	Monbusho (Japan)
2. Mr.Thongtod	Imperial College (England)	1990-1993	D	High Frequency circuit	British Council (England)
3. Mr.Punya	University of Brest(France)	1987-1994	D	Digital signal processing	CROUS/CESELEC (France)
4. Mr.Tawil P.	Tokaidai(Japan)	1991-1994	D	Microwave propagation	JSPS (Japan)
5. Mr.Monai	KMITL	1990-1993	D	Microwave antenna	
6. Mr.Pramote	KMITL	1991-1994	D	Electronic circuit design	

Notes 1.TIT :Tokyo Institute of Technology
 2.Imperial College :Imperial College of Science, Technology and Medicine
 3.Tokaidai :Tokai University

5. Staff Involved in Research and Training Abroad

Staff Name	Destination	Duration year/months	Subject	Fellowship
(Training)				
1. Mr.Narong	NTT, NEC, Anritsu	1988/3.5	Microwave Communication	JICA
2. Mr.Tawil K.	NTT, NEC, Anritsu	1988/4	Digital Transmission	JICA
3. Mr.Kemthong	NTT, Ando	1989/2.5	Outside Plant	JICA
4. Mr.Sukon	Tokai Univ.	1990/1.5	Rural Communication	JICA
5. Mr.Suchin	NTT	1991/2	Digital Switching	JICA
6. Mr.Manoon	NTT	1991/2	Network Planning	JICA
(Training and Research)				
7. Mr.Tawil P.	NTT Tokai Univ.	1990/1.5 1990/0.5	Digital Switching Microwave propagation	JICA ditto
8. Mr.Apinun	NTT Tokai Univ.	1992/1.5 1992/0.5	Optical Fiber Communication Optical Electronics	JICA ditto
9. Dr.Wivat	NTT Tokai Univ.	1992/1.5 1992/0.5	Data Communication Sign Recognition	JICA ditto

(continued)

Staff Name	Destination	Duration year/months	Subject	Fellowship
(Research)				
10. Mr.Monai	Tokai Univ.	1989/2	Microwave Applicator	JICA
		1992/1	---- ditto ----	JICA
11. Mr.Tavil P.	Tokai Univ.	19	Microwave Propagation	JSPS
		1993/3	---- ditto ----	JSPS
12. Dr.Kobchai	Tokodai Univ.	1990	Digital Signal Processing	JSPS
	--- ditto ---	1991/1	---- ditto ----	JICA
13. Dr.Suvipol	Oosaka Univ.	1992/1.5	Computer LAN Protocol	JICA
14. Mr.Kriangkrai	Tokodai Univ.	1992/1	Speech Signal Processing	JSPS
15. Mrs.Nipa	Tokai Univ.	1992/1	Radio Wave Propagation	JSPS
16.				
17.				

6. Educational Background of Staff

Degree	1988	1989	1990	1991	1992
1.Doctor	3	3	3	4	4
2.Master	12	12	12	13	13
3.Bachelor	6	6	5	5	5
Total	21	21	20	22	22

7. Research Funds

Budget Source	(Baht)				
	1988/89	1989/90	1990/91	1991/92	1992/93
NRCT	-	70,000 (1)	625,700 (3)	864,520 (3)	1,060,000 (3)
NECTEC	615,000 (1)	2,252,400 (1)	2,479,000 (1)	2,108,160 (1)	-
Total	615,000 (1)	2,322,400 (2)	3,104,700 (4)	2,972,680 (4)	1,060,000 (3)

Remarks • Figures in the bracket shows Number of Projects.

(Research Topics)

1. NRCT (NATIONAL RESEARCH COUNCIL OF THAILAND)

- | | | | |
|----------------------------------------------------------------------------|------------|--|-------------|
| (1) FY1989/90 | | | |
| 1) Microwave hyperthermia cancer treatment | 70,000 Bt | | Mr.Monai |
| (2) FY1990/91 | | | |
| 1) Body check signal transmitter and receiver system via telephone network | 205,600 Bt | | Mr.Tawil P. |
| 2) Design and construction of ortho-mode transducer for 6GHz - 4GHz | 149,500 Bt | | Mr.Sompol |
| 3) High accuracy rainfall measurement for heavy rainfaling in Thailand | 270,600 Bt | | Mr.Tawil P. |
| (3) FY1991/92 | | | |
| 1) Opto private branch exchange | 248,740 Bt | | Mr.Tawil P. |
| 2) Design of matrix-transposer and application in image processing | 225,540 Bt | | Dr.Kobchai |
| 3) The satellite signal of meteorological receiver and analyzer | 390,240 Bt | | Mr.Tawil P. |
| (4) FY1992/93 | | | |
| 1) Rural PABX | 385,000 Bt | | Mr.Tawil P. |
| 2) Wireless PABX | 297,000 Bt | | Mr.Tawil P. |
| 3) Management Information System for Security Printing Plants | 378,000 Bt | | Dr.Kobchai |

2. NECTEC (NATIONAL E

- | | | | |
|-------------------------------------------------------------------------------|--------------|--|-------------|
| (1) 1988/89 | | | |
| 1) Research on memory set | 615,000 Bt | | |
| (2) 1989/90 | | | |
| 1) Research and development engineering project for cellular mobile telephone | 2,252,400 Bt | | Mr.Tawil P. |
| (3) 1990/91 | | | |
| 1) Research and development engineering project for cellular mobile telephone | 2,479,000 Bt | | Mr.Tawil P. |
| (4) 1991/92 | | | |
| 1) Research and development engineering project for cellular mobile telephone | 2,108,160 Bt | | Mr.Tawil P. |

BROADCASTING

1. CURRICULUM	50
2. TEXTBOOKS PUBLISHED BY JICA SUPPORT	53
3. LIST OF TECHNICAL PAPERS	54
4. STAFF INVOLVED IN RESEARCH AND TRAINING ABROAD	57
5. EDUCATIONAL BACKGROUND OF STAFF	57
6. RESEARCH FUNDS	58

1. Curriculum

Subject	Credit (Lecture-Practice)	Revised/Set up Academic Year	Remarks
<Telecommunication, Regular Course>			
1st Year			
(1st Semester)			
Electromagnetics	3(3-0)		
Electronic Laboratory I	2(0-6)		
Radio Communications	3(3-0)	1989/1991	1/3
Fundamental of Television Engineering	3(3-0)	1989	1
Feedback Control System	3(3-0)	1989	1
English	2(2-0)		
Engineering Mathematics	2(2-1)		
Elective in Humanities	2(2-0)		
total		20(18-7)	
(2nd Semester)			
Microwave Communication System	3(3-0)	1989	1
Electronic Laboratory II	2(0-6)		
Principles of Communications	3(3-0)	1989	1
Electronic Circuit Design	3(3-0)	1989/1990	1/3
Computer Technology	3(3-0)	1989	1
Engineering Analysis	2(2-0)		
Technical English	2(2-1)		
Elective in Humanities	2(2-0)		
total		20(18-7)	
2nd Year			
(1st Semester)			
Electronic Communications	3(3-0)	1989/1991	1/3
Microcomputer Laboratory	2(0-6)	1991	4
Antenna and Radio Wave Propagation	3(3-0)	1989	1
Advanced Electronics	3(3-0)	1989	1
Data Communications	3(3-0)	1989	1
Project I	3(0-9)	1989	4
Engineering Elective	3(3-0)		
Elective in Social Science	2(2-0)		
total		22(17-15)	
(2nd Semester)			
Telecommunications Engineering Laboratory III	2(0-6)	1990	4
Project II	3(0-9)	1989	4
Engineering Elective	3(3-0)		
Engineering Elective	3(3-0)		

Engineering Elective	3(3-0)		
Elective in Social Science	2(2-0)		
Free Elective	3(3-0)		

total	19(14-15)		
grand total	81		

(Engineering Electives)

Remote Sensing Theory	3(3-0)		
Communication Networks & Transmission Lines	3(3-0)	1989	2
Electrical Engineering	3(3-0)		
Color Television Receiver	3(3-0)	1989	2
Telephone Technology	3(3-0)	1989	2
Television Transmitter	3(3-0)	1989	2
Television Control and System	3(3-0)	1989	2
Computer Language	3(3-0)		
Optical Fiber Communication	3(3-0)	1989	2
Satellite Communications	3(3-0)	1989	2
Statistical Communications	3(3-0)		

<Electronics, Regular Course>

1st Year

(1st Semester)

Electromagnetics	3(3-0)		
Semiconductor Devices	3(3-0)		
Electronic Circuits	3(3-0)	1989/1990	3/3
Electronic Laboratory I	2(0-6)		
Digital and Logic Circuit Design	3(3-0)		
English	2(2-1)		
Engineering Mathematics	2(2-0)		
Elective in Humanities	2(2-0)		

total	20(18-7)		
-------	----------	--	--

(2nd Semester)

Digital Electronics	3(3-0)		
Introduction to Microprocessor	3(3-0)	1990	3
Electronic Communications	3(3-0)	1991	3
Electronic Laboratory II	2(0-6)		
Microcomputer Laboratory	2(0-6)	1991	4
Computer Engineering	3(3-0)		
Engineering Analysis	2(2-0)		
Technical English	2(2-0)		

total	20(16-15)		
-------	-----------	--	--

2nd Year			
(1st Semester)			
Power Electronics	3(3-0)		
Electronic Circuit Design	3(3-0)	1990	3
Project I (Electronics)	3(0-9)	1989	4
Electronic Laboratory III	2(0-6)	1990	4
Applied Thermofluids	3(3-0)		
Control Engineering	3(3-0)		
Industrial Administration	2(2-0)		
Elective in Social Science	2(2-0)		

total	21(16-15)		
-------	-----------	--	--

(2nd Semester)			
Project II (Electronics)	3(0-9)	1989	4
Quality Control	3(3-0)		
Industrial Economics	2(2-0)		
Engineering Elective	3(3-0)		
Engineering Elective	3(3-0)		
Engineering Elective	3(3-0)		
Engineering Elective	3(3-0)		

total	20(17-9)		
grand total	81		

(Engineering Electives)			
Electronic Instrumentation	3(3-0)		
Electrical Engineering	3(3-0)		
Noise Reduction in Electronic System	3(3-0)		
Television Engineering	3(3-0)		
Broadcasting Engineering	3(3-0)		
Microwave Communication System	3(3-0)		
Applied Microprocessor	3(3-0)		
Optoelectronics	3(3-0)		
Remote Sensing Theory	3(3-0)		
Design with Integrated Circuits	3(3-0)		
Network Theory	3(3-0)		
Solid State Motor Control	3(3-0)		
Bio-Medical Electronics	3(3-0)		
Radio Wave Propagation	3(3-0)		
Antenna Engineering	3(3-0)		
Computer Language	3(3-0)		

-
- Remarks(1) 1: set up (compulsory).
2: set up (elective).
3: using new textbooks written by instructor(staff of the department).
4: Introducing new equipment in laboratories.
- (2) Part-time course is three year course and the curriculum is the same as the regular course.

2. Textbooks Published by JICA Support

Title	Author	Published Year	Courset to be used (Year/Semester)
1. Textbook of Color Television Engineering	Dr.Tawat M. Mr.Sawamura Y. Mr.Tamura Y. and others	1989	Fundamental of Television (1/1,E/D) (1/2,E/P)
2.Basic Electronics	Mr.Nikorn S.	1989	Electronic Circuits (1/1,E D) (1/2,E P)
3.Introduction to Microprocessor(Z-80)	Mr.Attasit L.	1990	Introduction to Microprocessor (1/1,E D) (1/2,E P) Microcomputer Laboratory (2/1,T D) (2/1,T P) (2/2,E D) (2/1,E P)
4.Electronic Circuits Design	Mr.Nikorn S.	1990	Electronic Circuits Design (2/1,E D) (2/1,T D) (2/1,E P) (1/2,T D)
5.Problems and Solutions in Electronics	Mr.Nikorn s.	1990	Electronic Circuits Design ditto
6.Video Test Signal	Dr.Kanok J	1990	Electronic Communications (2/1,E D) (2/1,T D) (2/1,E P) (2/2,T P)
7.Radio and Television Transmitter	Mr.Pradit V.	1991	Radio Communications (1/1,T D) (1/1,T P)
8.Fundamental of HDTV (HDTV Part 1)	Mr.Vichai S.	1992	Fundamental of Television Engineering
9.Principles of HDTV System (HDTV Part 2)	Mr.Uthai S.	1992	Fundamental of Television Engineering
10.Electronic Circuit Design II	Mr.nikorn S.	1992	Electronic Circuits Design

Remarks: T: Telecommunications course
E: Electronics
D: Daytime (Regular)
P: Part-time

3. List of Technical Papers

3-1. Number of Technical Papers Presented

	1988	1989	1990	1991	1992	Total
International Journal	0	0	0	0	0	0
International Conference Paper	0	1	0	0	1	2
Journal in Thailand	0	0	0	0	0	0
Conference Paper in Thailand	2	1	8	4	2	17
Total Number of Papers	2	2	8	4	3	19
Number of Staffs	7	7	10	12	15	-

3-2. List of Technical papers
(Including the papers submitted and under preparation)

1988

1. K.Klomkarn and K.Jainchitrapongvej, "Insertion of Teletext Signal on Horizontal Blankng Interval RC Lines", 11th Conference of Electrical Engineering, 16-17 December 1988, Rachamongkol Institute of Technology, Thailand.
2. A.Lasakul, M.Sangworasil, P.Koosirivanichakorn and P.S., "Real Time Video Digitizer" 11th Conference of Electrical Engineering, 16-17 December 1988, Rachamongkol Institute of Tecnology, Thailand.

1989

3. K.Jainchitrapongvej and M.Teramoto, "Realization of an Active Low pass Filter using Uniformly Distributed", IEICE,CAS 89-54-71, 26 October 1989, OSAKA, JAPAN
4. P.Sithiyopasakul, C.Benjangkprasert and K.Jainchitrapongvej, "On the Approximation with Low Pass Filter with Maximally Flat Group Delay", 12th Conference of Electrical Engineering, 24-25 December 1989, Kasetsart University, Thailand.

1990

5. K.Jainchitrapongvej, "The Characterization of the Generalized Bessel Polynomials", 16th Conference on Science and Technlogy of Thailand, 25-27 October 1990, Central Plaza Hotel, Bangkok, Thailand.
6. C.V. and K.Jainchitrapongvej, "Equalization of Luminance to Chrominance Linear", 13th Conference of Electrical Engineering, 8-9 December 1990, Chiang Mai University, Thailand.
7. P.Sithiyopasakul and K.Jainchitrapongvej, "Realization of an Equalizer Using Uniform Distributed RC Circuit", 13th Conference of Electrical Engineering, 8-9 December 1990, Chiang Mai University, Thailand.
8. K.T. and K.Jainchitrapongvej, "On the Approximation of Sine-Squared Pulse by Using Optimization", 13th Conference of Electrical Engineering, 8-9 December 1990, Chaing Mai University, Thailand.
9. A.S., K.Jainchirapongvej and M.Krairiksh, "Analysis of Yagi Dipole Antenna by Using Two Term Current Distribution", 13th Conference of Electrical Engineering, 8-9 December 1990, Chiang Mai University, Thailand.
10. A.S., K.Jainchirapongvej and J.Ngamwivit, "Improve of Pre-Undershoot in Model Reduction Obtained by Aggregation", 13th Conference of Electrical Engineering, 8-9 December 1990, Chaing Mai University, Thailand.

11.C.Benjangkaprasert and K.Jainchitrapongvej, "Design of a Second Order Buterworth Type Wave Digital filter", 13th Conference of Electrical Engineering, 8-9 December 1990, Chaing Mai University, Thailand.

12.A.Lasakul, V.S., M.Sangworasil and P.S., "High resolution Color Image Digitizer by Low Access Time Memory Devices", 13th Conference of Electrical Engineering, 8-9 December 1990, Chiang Mai University, Thailand.

1991

13.C.Teekapakvisit and K.Jainchirapongvej, "Realization of an Low Pass Sharp Cut Off Filter by Using Distributed RC Circuit", The Engineering Institute of Thailand, 23-24 May 1991, Asia Hotel, Bangkok, Thailand.

14.K.Jainchirapongvej, "On the Approximation of Line Square Pulse by Using Negative Gradient with Prescribed Poles", 14th Conference of Electrical Engineering, 7-8 December 1991, Prince of Songkla University, Thailand.

15.K.Jainchirapongvej, "Ultraspherical Generalized Bessel Polynomial Low Pass Filter", 14th Conference of Electrical Engineering, 7-8 December 1991, Prince Songkla University, Thailand.

16.K.Jainchirapongvej, "Application of FM Broadcasting for Information Service", 14th Conference of Electrical Engineering, 7-8 December 1991, Prince Songkla University, Thailand.

1992

17.N.Sukumatanti, J.Jainchitrapongvej and M.Teramoto, "Active High Pass and Band Pass Filter Using Uniformly Distributed RC Lines", JIC-CSCC'92 Conference, 27-28 July 1992 Korea Pusan.

18.D.Sukcharaunpol and K.Jainchitrapongvej, "The Inverse Ultraspherical and Bessel Low Pass Filter", 15th Conference of Electrical Engineering, 3-4 December 1992, KMITT, Thailand.

19.K.Jainchitrapongvej, "An Equalization of Chrominance Signal Amplitude" 15th Conference of Electrical Engineering, 3-4 December 1992, KMITT, Thailand.

4. Staff Involved in Research and Training Abroad

Staff Name	Destination	Duration Year/Months	Subject	Fellowship
1. Dr.Kanok J.	NHK, Tokai University & Sony Co. etc. (Japan)	1988/2	Measuring Technology	JICA
2. Dr.Anan C.	NHK & Sony Co. etc. (Japan)	1989/2	Advanced Technology on Broadcasting	JICA
3. Mr.Uthai S.	NHK-CTI & Shibaōoku Co. (Japan)	1990/2.5	Broadcasting Engineering	JICA
4. Mr.Nikorn S.	Tokai University (Japan)	1990/1	Filter Designing	JSPS
5. Mr.Pradit V.	NHK-CTI (Japan)	1990/1.5	Broadcasting Engineering	JICA
6. Mr.Nikorn S.	Tokai University (Japan)	1991/3	Filter Designing	JICA
7. Mr.Vichai S.	NHK & Sony Co. (Japan)	1991/2	HDTV Technology	JICA
8. Mr.Attasit	Tokai University (Japan)	1992/8	Digital Signal Processing	JICA
9.(-----)	Tokai University (Japan)		(Digital Signal Processing)	JICA

5. Educational Background of Staff

Degree	1988	1989	1990	1991	1992
1. Doctor	3	3	3	3	3
2. Master	3	3	6	6	7
3. Bachelor	1	1	1	3	5
	7	7	10	12	15

6. Research Funds

TYF	Topic	Name	Budget(Bt)	Budget Source
1990	Chrominance Gain and Delay Equalizer	Dr.Kanok J.	65,000	Government of Thailand
1991	Digital Voice Scramble	Dr.Kanok J.	120,000	Government of Thailand

TFY : Thailand Fiscal Year

DATA COMMUNICATION

1. CURRICULUM	60
2. TEXTBOOKS PUBLISHED BY JICA SUPPORT	68
3. LIST OF TECHNICAL PAPERS	70
4. STAFF STUDYING IN DOCTOR/MASTERR COURSE	76
5. STAFF INVOLVED IN RESEARCH AND TRAINING ABROAD	78
6. EDUCATIONAL BACKGROUND OF STAFF	79
7. RESEARCH FUND	80
8. Additional	

1. Curriculum

Curriculum for Master of Science *
Program in Computer Science and Information Technology

Subject	Credit(Lecture-Practice)	Revised/Set up Academic Year	Remarks
1st year			
(1st semester)			
Research I	-(0-6)	1990	
Computer Organization	3(3-0)	1990	
Algorithms and Programming Technique	3(3-0)	1990	
Elective in Advance Mathematics	3(3-0)	1990	
Computer and Information Elective	3(3-0)	1990	
Total		12(12-6)	
(2nd semester)			
Research II	-(0-6)	1990	
Seminar I	1(0-3)	1990	
Data Structure and File Organization	3(3-0)	1990	
Database Management System	3(3-0)	1990	
Information Resource Management	3(3-0)	1990	
Computer and Information Elective	3(3-0)	1990	
Total		13(12-9)	
2nd year			
(1st semester)			
Research III	-(0-6)	1990	
Seminar II	1(0-3)	1990	
Information System Analysis and Design	3(3-0)	1990	
Computer and Information Elective	3(3-0)	1990	
Computer and Information Elective	3(3-0)	1990	
Total		10(9-9)	
(2nd semester)			
Master Thesis	12(0-6)	1990	
Computer and Information Elective	3(3-0)	1990	
Total		15(3-6)	

Electives in Advance Mathematics :-

Discrete Mathematics
Mathematical Logic
Numerical Analysis
Queuing Theory and Applications
Optimization Techniques
Matrix Analysis
Non-Linear Programming

Computer and Information Electives:-

Information Concepts in Organizations
Management Information System Policy
Operational Management
Data Communications and Computer Network
Software Engineering
Operating System
Modeling and Decision Support System
Logic
Computer Applications in Business
Office Automation Systems
Computer System Performance Evaluation
Digital Image Processing
Remotely Sensed Data Processing
Pattern Processing and Recognition
Interactive Computer Graphics
Artificial Intelligence
Computational Linguistics
Knowledge Base Systems
Automation and Finite State Machine
Selected Topics in Computer and Information Science
Advance Topics in Computer and Information Science
Information System Development Project

BASIC Programming
FOTRAN Programming
COBOL Programming
PLI & RPG Programming
Digital # Computer Structures

* This new curriculum was set up in 1990 in order to provide the new program with pioneering and well-balanced curriculum.