

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/setup	Remarks
		Academic Year	
1st year			
(1st semester)			
Engineering Laboratory I	1(0-3)	1990	Old title "Physics Laboratory I"
Electrical Circuit Analysis	3(3-0)		
Mechanics	3(3-0)		
Mathematics	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 Sciences	2(2-0)	1990	Old title "Programming Laboratory II"

Subject	Credit(Lecture-Practice)	Revised/setup	Remarks
		Academic Year	
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 Microcompute	3(3-0)	1990	Old title "Digital Logic Design and Microprocessor I"
Principle 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 Electrical	3(3-0)	1990	Merge "Electronic Engineering I" and "Electronic Engineering II"
Total		21(20-3)	

Subject	Credit(Lecture-Practice)	Revised/setup	Remarks
		Academic Year	
(2nd semester)			
Data Structures and Algorithms	3(3-0)	1990	New
Switching Theory	3(3-0)	1990	Transfer from 3 year 2-semester
Microprocessor Interfacing	3(3-0)	1990	Old title "Digital Logic Desing 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/setup 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 "Compilers" (Elective) to Core

Subject	Credit(Lecture-Practice)	Revised/setup	Remarks
Academic Year			
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 2 nd year
Total		1(0-320)	

4th year

(1st semester)

Project I	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	
Electives in Social Sciences	2(2-0)		
Total		14(11-9)	

Subject	Credit(Lecture-Practice)	Revised/setup Academic Year	Remarks
(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	
Electives in Social Sciences	2(2-0)	1990	Increase 1 Electives
Electives in Social Sciences	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.

2. Textbooks Published by JICA Support

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.Pakinee 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 Sonthipermpon	1992	Training of CAD/CAM Center
12. Theory and Problems of Programming with Pascal	Dr.Chom Kimpan Mr.Kawin Sonthipermpon	1992	"Theory and Problems of Programming with Pascal" (Tutorial course)
13. Discrete Mathematics	Ms.Pakkinee Jimreivat	1992	"Discrete Mathematics" (Master Course)

3. List of Technical Papers

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(%)

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. Ralree, "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 charecter.," 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. Veeratavemuth, "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. Veeratavemuth, "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 Exert 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 Grneral Digital Picture.," Proc. of 12th Conference of Electrical Engineering, 10-11 Nov. 1990

10. K. Maitree, K. Werathawemach, 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 Graphnomics 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. Veeratavemuth, "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. Lerdbussarakam, "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. Jintanassontonsiri, and S. Weratawemas, "Finger print Verification", Proc. of 15th Conference of Electrical Engineering 7-8 Nov. 1992.

4. Staff Studying in Doctor/Master Course

Staff Name	Destination	Duration	Master /Doctor	Subject	Fellowship
1. Mr.Yuthapong	Grenoble Univ. (France)	1987-1993	Doctor	Image Processing	Government of France
2. Mr.Wiboon	AIT(Bangkok)	1990-1991	Master	Computer Sciences	Germany
3. Mr.Somsak	England	1989-1993	Master /Doctor	VLSI Achitectures for Signal Processing	the United Kingdom
4.Ms.Chutimate	United State	1992-1998	Master /Doctor	Computer Engineering	Government (Organization University)
5.Mr.Surat	England	1991-1996	Master /Doctor	Medical Electronic	Thai Government
6.Mr.Somkait	Japan	1991-2001	Bachelor /Master /Doctor	Computer Network	Thai Government
7.Ms.Pornsri	United State of America	1991-1996	Master /Doctor	AI	Thai Government
8.Mr.Kosol	England	1991-1996	Master /Doctor	Computer Network	Thai Government
9.Mr.Warakorn	United State of America	1991-1996	Master /Doctor	Intigrate Circuit	Thai Government
10.Mr.Somchati	United State of America	1991-1996	Master /Doctor	Medical Electronic	Thai Government
11.Mr.Muhammad	United State of America	1991-1996	Master /Doctor	Electronic Material	Thai Government
12.Mr.Worawat	United State of America	1991-1996	Master /Doctor	Electronic Circuit	Thai Government
13.Mr.Boonchai	United State of America	1991-1996	Master /Doctor	Computer System Technology	Thai Government
14.Ms.Yaowadee	England	1991-1996	Master /Doctor	Computer Software	Thai Government
15.Mr.Savat	United State of America	1991-1996	Master /Doctor	Telecommuni- cation device	Thai Government

Staff Name	Destination	Duration	Master /Doctor	Subject	Fellowship
16.Mr.Somchati	France	1992-2001	Bachelor /Master /Doctor	Medical Electronic	Thai Government
17.Mr.Muhammad	Japan	1992-2002	Bachelor /Master /Doctor	Computer System Technology	Thai Government
18.	United State of America	1992-1997	Master /Doctor	AI	Thai Government
19.Mr.Patarachai	United State of America	1992-1997	Master /Doctor	AI	Thai Government
20.Mr.Choochat	United State of America	1992-1997	Master /Doctor	Medical Electronic	Thai Government
21.Mr.Nonthapon	United State of America	1992-1997	Master /Doctor	Electronic Circuit	Thai Government

5. Staff Involved in Research and Training Abroad

Staff Name	Destination	Duration year/months	Subject	Fellowship
1. Mr. Boonwat A.	Japan	1988/2	Pattern Recognition	NRCT-JSPS
2. Mr. Kanchit M.	Japan	1989/3	Telecommuni- cations Eng.	Tokai University
3. Ms. Kittima M.	NEC (Japan)	1989/1.5	Acos-4 Software	JICA
4. Mr. Wicha S.	NEC (Japan)	1989/2.5	Acos-4 Hardware	JICA
5. Mr. Praiboon P.	NEC (Japan)	1989/2	Acos-4 Software	JICA
6. Mr. Kanchit M.	Japan	1990/3		NRCT-JSPS
7. Mr. Boonwat A.	Japan	1990/1		NRCT-JSPS
8. Mr. Petch S.	NEC (Japan)	1990/3	Acos-4 Hardware	JICA
9. Mr. Somchai D.	Tokai University (Japan)	1990/3	Software Development	JICA
10. Mr. Prasert P.	NEC (Japan)	1990/2	Acos-4 Software	JICA
11. Mr. Kanchit M.	Japan	1991/2		Tokai University
12. Mr. Watchara C.	Tokai University (Japan)	1991-92/6.5	Computer Engineering	JICA
13. Ms. Douangporn S.	Tokai University (Japan)	1992/2.5	Software Development	JICA
14. Mr. Voravat L.	*NACSIS etc. (Japan)	1992/.6	Computer Network	JICA
15. Mr. Akarin K.	**TUAT etc. (Japan)	1992/	Computerized Tomography	JICA

* NACSIS : National Center for Science Information Systems

** TUAT : Tokyo University of Agriculture Technology

6. Educational Background of Staff

1) Computer Research and Service Center

Degree	1988	1989	1990	1991	1992
1. Doctor	1	1	1	1	-
2. Master	3	2	2	2	3
3. Bachelor	4	4	4	3	4
Total	8	7	7	6	7

2) Department of Computer Engineering

Degree	1988	1989	1990	1991	1992
1. Doctor	5	6	7	7	8
2. Master	3	3	5	7	7
3. Bachelor	2	2	2	1	3
Total	10	11	14	15	18

7. Research Funds

(BAHT)

Budget Source	1988/89	1989/90	1990/91	1991/92	1992/93	Total
Thai Government	1,053,500 (5)	1,626,287 (5)	3,140,000 (7)	518,320 (1)	0 (0)	6,338,107 (18)
NECTEC	6,907,985 (4)	6,935,000 (5)	14,799,800 (6)	7,042,960 (5)	4,976,960 (4)	40,622,705 (24)
OTHERS	-	997,000 (1)	997,000 (1)	1,197,000 (3)	997,000 (1)	4,188,000 (6)
TOTAL	7,961,485 (9)	9,558,287 (11)	18,936,800 (14)	8,758,280 (9)	5,973,960 (5)	51,188,812 (48)

(Research Topics)

1. Thai Government

FY1988/89

- | | | |
|---|------------|------------------|
| 1) VLSI Design Part I | 86,100 Bt | Mr. Boonwat A. |
| 2) Multitype Computer
Internetworking | 214,400 Bt | Mr. Rattikorn V. |
| 3) Microcomputer Based Satellite
Image Processing for Hardcopy
Production | 214,400 Bt | Mr. Pairash T. |
| 4) AI Expert Systems | 269,300 Bt | Mr. Pairash T. |
| 5) Thai Voice Recognition | 269,300 Bt | Mr. Pairash T. |

FY1989/90

- | | | |
|--|------------|------------------|
| 1) VLSI Design Part II | 155,040 Bt | Mr. Boonwat A. |
| 2) Multitype Computer
Internetworking II | 365,200 Bt | Mr. Rattikorn V. |
| 3) Microcomputer Based Satellite
Image Processing for Hardcopy
Production II | 382,324 Bt | Mr. Pairash T. |
| 4) AI Expert Systems II | 447,376 Bt | Mr. Pairash T. |
| 5) Thai Voice Recognition II | 276,347 Bt | Mr. Chom K. |

FY1990/91

- | | | |
|---|------------|----------------|
| 1) Geographics Information
Systems | 455,000 Bt | Mr. Surasil V. |
| 2) Thai Voice Recognition III | 255,000 Bt | Mr. Chom K. |
| 3) Neural network for
Adaptive Systems | 435,000 Bt | Mr. Kanchit N. |

4) Professional Thai-English Desktop Publishing	355,000 Bt	Mr.Surasit V.
5) Basic Image Processing Development System for Microcomputer	450,000 Bt	Mr.Surasit V.
6) Electronic Image/Text Mail System	550,000 Bt	Mr.Surasit V.
7) Development of a TSS-Based Authoring System for Computer-Based Instruction	640,000 Bt	Ms.Kittima M.

FY1991/92

1) Development of a Computer-Managed Instruction Programs Using a Thai-Language Microcomputer	518,320 Bt	Ms.Kittima M.
---	------------	---------------

2. NECTEC(National Electronic and Computer Technology Center)

FY1988/89

1) Computerized X-Ray Tomography	2,300,000 Bt	Mr.Pairash T.
2) Computer Network	4,000,000 Bt	Mr.Pairash T.
3) Automatic Recognition of Thai-English Characters	345,160 Bt	Mr.Chom K.
4) CAD Software for VLSI Design "NECTEC I "	562,825 Bt	Mr.Boonwat A.

FY1989/90

1) Computerized X-Ray Tomography	1,980,000 Bt	Mr.Pairash T.
2) Computer Network	1,400,000 Bt	Mr.Pairash T.
3) Automatic Recognition of Thai-English Characters	300,000 Bt	Mr.Chom K.
4) Commercialized VLSI Design for Thai Card	3,060,000 Bt	Mr.Watchara C.
5) CAD Software for VLSI Design "NECTEC I"	195,000 Bt	Mr.Boonwat A.

FY1990/91

1) Computerized X-Ray Tomography	3,000,000 Bt	Mr.Pairash T.
2) Computer Network	8,125,200 Bt	Mr.Pairash T.
3) Automatic Recognition of Thai-English Characters	306,000 Bt	Mr.Chom K.
4) Unix-Base Engineering Workstation	1,451,600 Bt	Mr.Surasit V.
5) 16 Bit Computer System	795,000 Bt	Mr.Wicha S.
6) Commercialized VLSI Design for Thai Card	1,122,000 Bt	Mr.Watchara C.

FY1991/92		
1) Computer Network	4,600,000 Bt	Mr.Pairash C.
2) Improvement Reliability of Character Recognition System on Microcomputer	280,000 Bt	Mr.Chom K.
3) Computer Numerical Control Vertical Milling Machine	946,960 Bt	Mr.Kawin S.
4) Automatic Fingerprint Identification System (AFIS)	400,000 Bt	Mr.Kanchit M.
5) Commercialized ASIC Design for Hard Lock	816,000 Bt	Mr.Prasarn T.

FY1992/93		
1) Computer Network	3,500,000 Bt	Dr.Pairash T.
2) Improvment Reliability of Character Recognition System on Microcomputer	260,000 Bt	Dr.Chom K.
3) Computer Numerical Control Vertical Milling Machine	946,960 Bt	Dr.Kawin S.
4) Automatic Fingerprint Identification System (AFIS)	270,000 Bt	Mr.Kanchit M.

3.others

FY1989/90

1) ASEAN-Australia Economic Cooperation Program on Microelectronic Project	997,000 Bt	Dr.Boonwat A.
---	------------	---------------

FY1990/91

1) Same as above

FY1991/92

1) Same as above		
2) University Computer System Development:Faculty of Administration	130,000 Bt	Ms.Pakkinee J.
3) A Comparative Study of Sciences Students Achievement in Faculty of Sciences,King Mongkut's Institute of Technology Chaokuntaharn Lardkrabang Select by the Promotion of Faculty of Sciences and the State University Bureau	70,000 Bt	Ms.Pakkinee J.

FY1992/93

1) ASEAN-Australia Economic Cooperation Program on Microelectronic Project	997,000 Bt	Dr.Boonwat A.
---	------------	---------------

8. Additional

KMITL Campus Network

On KMITL Campus Network, which was referred by KMITL member at the beginning of the current Project that KMITL would develop campus networks, KMITL succeeded to take budget of 13 MB in the period of 1991-1994. In the study phase of 1991-1992, KMITL requested JICA to send a short-term expert for the study.

Dr. Kanazawa (Kyoto Univ.) visited for this purpose. Dr. Ohara (Tokai Univ.), who visited on another business, also gave us useful advice. Among others, history of development, objectives, configuration, utilization, international networking were explained. As regards hardware configuration, optic fibre backbone networking, digital telephone and digital PBX networking, and analog telephone and analog PBX networking were recognized. The first one is usually used for high-speed transmission. The second one is 64 kbps and has a merit in long-time connection to computer system, voice-data-fax transmission. The third one is 9.8 kbps and good enough to support E-mail system and ordinary database retrieval system.

KMITL will convene ^{ene} ~~face~~ a committee to discuss the primary objectives of the network and most appropriate network.

FACULTY OF INFORMATION TECHNOLOGY

The Seventh National Economic and Social Development Plan authorized for KMITL to establish Faculty of Information Technology which had been proposed by KMITL with the aim to promote information technology as one of the targets of education and research to serve better for the country to increase social and economic value along with better quality of life and environment.

KNITL requested JICA to dispatch short-term experts to formulate the scope of the faculty and compile the curriculum. JICA dispatched short-term experts two times for this purpose.

First time, Dr.Tominaga (Prof. Waseda Univ.) and Dr.Ohara (Prof.Tokai Univ.) were dispatched and had discussion with Dr.Pairash (former Director ,CRSC) and his staff. Dr.Pairash expressed the necessity to produce more engineer in information technology and his wish to establish the new faculty without any change to existing faculty or department as much as possible. Dr.Tominaga suggested area and subarea of information technology on the line of history of development of electronics.Dr.Ohara suggested that information technology is an independent and unique discipline where algorithm and data structure are mainly used apart from existing disciplines. Output documents of the discussion were produced as"FACTULTY OF INFORMATION TECHNOLOGY CURRICULUM"which shows name of courses and some key words for each course.

Second time, Dr.Chara (Prof.Tokai Univ.) and Dr.Nomura(Prof.Tokai Univ.)were dispatched and had discussion with Dr.Chom (Director,CRSC) and his staff. Input documents of the discussion were"Information Technology as a Discipline","Faculty of Information Technology Curriculum" and "Course Description". Considering the importance of laboratory work, time allocation to practice was increased rather than lecture hours. There were also review and revision on the input documents. Output documents of discussion were produced as the revized "Faculty of Information Technology Curriculum" and "Course Description"

The job on this issue which could be done during current Project is terminated.

INTERUNIVERSITY NETWORK PROJECT

The National Electronics and Computer Technology Center (NECTEC), Minister of Science Technology, and Environment (MOSTE), set up a networking project, the Interuniversity Network Project in late 1988. The objective is to implement a nation-wide network to support universities in the sharing of information and computational resources.

The initial phase of the project which connect four major institutions (Asian Institute of Technology, Chulalongkorn University, KMITL, MOSTE) is under test and experiment.

The project will expand the network with linking the computer center of at least 11 universities all around the country together with the computer center of MOSTE and also linking other appropriate information center or other computer networks abroad as well.

Technically, this is a matter of interoperability among different types of computers.

Mr. Okuno visited KMITL for this purpose. There are two major problems to ensure interoperability of this network utilizing NEC-610 as one of the mainframes. The first is the connection between NEC-610 and PSTN. The second is the types of terminals which could access to NEC-610. There are three methods were recognized as regards the first question:

- 1) To use B4670 (LAN/Ethernet) which will be connected by the support of JICA

- 2) To use EWS UNIX or

- 3) To activate X-25 interface of NEC-610.

As regards the second question, one possible method is to attach Bisync card and ETOS emulator to terminals.

JICA is willing to help to solve these problems as long as this Expansion Project continues, presumably up until March 1993.

Development of KMITL Management Information System

1. Objective

The development of KMITL Management Information System (KMIS) has been initiated for three main objectives :

1. To implement a centralized information system for the purposes of the Institute's administration.
2. To provide an instrumentation for informing the administrative staffs about those variables which represent the state of the Institute (such as cash held at bank, staff numbers, stock holdings) and about those which represent changes, or rates of changes, in variables affecting the Institute (such as cash flow, income, salary pay, annual budget).
3. To develop a system for supporting daily maintenance functions by producing documents and reports (such as payrolls, grade reports, class rolls schedules, lists, and notices), as well as providing management information for current decision making and long range planning.

The KMIS, as being in the process of development, is divided into 8 sub-systems, each of which supports mainly on the current activities of a specific division of the Rector's Office.

2. Development History

2-1 Initial Status of KMIS at the beginning the Project

- . system : NEC S - 300
- . Type of Processing : Batch
- . Program in Operation
 - 1) Student Registration (Different format and separate program for each faculty)
 - 2) Payroll
 - 3) Personnel

2-2 Development Plan

- . System : NEC S - 610
- . Type of Processing : On - line
- . Programs to be developed
 - 1) Student Registration and Record
 - 2) Payroll
 - 3) Personnel
 - 4) Finance and Accounting (Government)
 - 5) Finance and Accounting (Income of KMITL)
 - 6) Equipment (budget Plan, Purchase, Registration)
 - 7) Utility
 - 8) Library

2-3 Personnel
Fiscal year 1992

- | | | |
|-----------------------------------|---|---|
| 1. Mr. Praiboon Pantarakphong | : | S&PD Staff (SA&DBA) |
| 2. Mr. Wichai Supasutheekul | : | S&PD Staff, PA (Feb, 1992) |
| 3. Ms. Wannee Larpwatanakit | : | S&PD Staff, PA (Feb, 1992) |
| 4. Mr. Theerasak Shongprasertchai | : | Part - time programmer |
| 5. Ms. Chitradha Polnimitara | : | Part - time programmer |
| 6. Ms. Khanitha Akrasanondh | : | Part - time programmer |
| 7. Mr. Jakrapadh Wisawakul | : | Part - time programmer |
| 8. Ms. Wannee Petchmaneelumkha | : | Part - time programmer
(Oct, 1991 - Jan, 1992) |
| 9. Mr. Somwang Saetang | : | Part - time programmer
(Oct, 1991 - Jan, 1992) |
| 10. Ms. Orawan Leewatinsansuk | : | Part - time programmer
(Oct, 1991 - Jan, 1992) |
| 11. Mr. Anon Suksathealwong | : | Part - time programmer
(Oct, 1991 - Jan, 1992) |
| 12. Mr. Chatchai Naksuthi | : | S&PD Staff, TN |
| 13. Ms. Chusri Kumlampai | : | S&PD Staff, DE |
| 14. Ms. Sumana Punpermbulkusol | : | S&PD Staff, GA |
| 15. Mr. Pisedh Winijchaikul | : | S&PD Staff, TN
(Feb, 1992) |

Notes

S&PP	:	System & Program Division	SA	:	System Analyst
DBA	:	Data base Administrator	TN	:	Technician
PA	:	Programmer analyst	GA	:	General Administration
DE	:	Data entry Operator			

3. Current Status

Sub System	Software Development	Manual Document	Terminal	Operation (Starting Date)
1. Students Registration and Record	100%	Yes	Yes	Full operation : June, 1990
2. Payroll	100%	Yes	Yes	Full operation : June, 1991
3. Personnel*	100%	Yes	Yes	Full operation : June, 1990
4. Financial and Accounting (Government)	25%	No	Yes	Partial operation: June, 1992
5. Financial and Accounting (Income of KMITL)	20%	No	Yes	Partial operation: Sep, 1992
6. Equipment (Budget Plan, Purchase, Registration)	100%	Yes	Yes	Full operation : Sep, 1991
7. Utility	100%	Yes	Yes	Full operation : June, 1990
8. Library (Catalog & Circulation)	80%	No	No	

* Microcomputer is used for this subsystem.

Computer Services

1. Computer Usage (Class and free) use for the first semester, 1992
(June-September) (Hours)

Faculty	June	July	August	September
1. Faculty of Engineering	936	748	996	1,253
2. Faculty of Architecture	230	315	226	537
3. Faculty of Science	710	798	1,162	998
4. Faculty of Industrial Education	570	365	398	363
5. Faculty of Agriculture Technology	420	740	498	429
Total	2,866	2,966	3,280	3,580

Remark : There are thirty tree terminals in the computer room now

2. Computer Usage(Class) for 1991

(1) First Semester

Faculty	Subject	Day&Time	No. of Student
Agricultural	Introduction to Programming	Mon. 9.30-12.30	180
Engineering	Assembly Language	Tue. 9.30-12.30	47
Science	Cobol Programming	Wed. 9.30-12.30	80
Science	Science Programming	Thu. 9.30-12.30	40
Achitecture	Computer I	Fri. 13.00-16.30	40
Achitecture	Computer II	Sat. 9.30-12.30	40

(2) Second Semester

Faculty	Subject	Day&Time	No.of Student
Science	Science Programming	Mon. 13.00-16.30	33
Agricultural	Introduction to Programming	Tue. 13.00-15.30	60
Achitecture	Computer II	Wed. 13.30-16.30	36
Science	C.Programming	Thu. 13.00-16.30	33
Achitecture	Computer II	Fri. 13.00-16.30	36
Achitecture	Computer I	Sat. 9.30-12.30	41
Science	Microsoft Cobol	Sat. 13.00-16.30	60

MECHANICAL ENGINEERING

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

1. Curriculum

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.

2. Textbooks Published by JICA Support

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. Akraddech	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. Vipap	1990	Linear Control System (4/1)
14. Modern System Analysis	Mr. Vipap	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)

3. List of Technical Papers

3-1. 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.

3-2. 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.Ngamwiwit, "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 Microprocessor", Proc.of the 13th Electrical Engineering Conference.
16. J.Ngamwitit, et al, "Improved Pre-undershoot in Model Reduction Obtained by Aggregation", Proc.of the 13th Electrical Engineering Conference.
17. Y.Prempraneerach and J.Ngamwiwit, "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.Mongkolwongrojn, "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.Mongkolwongrojn 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.Mongkolwongrojn, "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.Mongkolwongrojn, "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 of FRP Plate with Notches", Proc.of the 5th Mechanical Engineering Symposium, Chiangmai University.
9. P.Attavanich and M.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 Foundrymen'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.Mongkolwongroj, "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 PMM 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.Mongkolwongrojn, "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.Mongkolwongrojn, "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.Mongkolwongrojn, "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.Mongkolwongrojn, "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.Mongkolwongrojn, 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.Mongkolwongrojn 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.Mongkolwongrojn, "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.Mongkolwongrojn and H.Hashimoto, "Static and Dynamic Characteristics of Elliptical Journal Bearings with Non-Newtonian Lubricants(in English)", Tribology International, UK, under prepared.
9. M.Mongkolwongrojn and H.Hashimoto, "Theoretical Analysis of Long Journal Bearing with Non-Newtonian Grease(in English)", Journal of Science in Thailand, under submitted.
10. M.Mongkolwongrojn and H.Hashimoto, "Static Characteristics Analysis of Smooth Surface Elliptical Journal Bearings in Turbulent Regime", Proc.of Engineering Institute of Thailand.
11. M.Mongkolwongrojn 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(Transmissions 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.Soontornchati 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.Soontornchati, 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.Mongkolwongrojn, "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.Mongkolwongrojn, "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.Mongkolwongrojn, "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.

4. Staff Studying in Master/Doctor Course

Staff Name	Destination	Duration	Master /Doctor	Subject	Fellowship
1.Mr.Ming L.	Imperial College (England)	1989-1993	Doctor	Solid Mechanics	British Government (England)
2.Mr.Pongjeit P.	Imperial College (England)	1990-1994	Doctor	Fluid Mechanics	British Government (England)
3.Mr.Jaruwat C.	Imperial College (England)	1991-1995	Master & Doctor	Combustion	British Government (England)
4.Mr.Chinda C.	Tokai University (Japan)	1991-1993	Master	Internal Combustion Engine	Isuzu Motors Co., Ltd.
5.Mr.Chinarak T.		1993-1998	Master & Doctor	Thermal System Design	Ministry of Science and Technology
6.Mr.Unnut P.		1993-1998	Master & Doctor	Control Applications	Ministry of Science and Technology
7.Mr.Monsak P.		1993-1998	Master & Doctor	Mechanical Design	Ministry of Science and Technology

5. Staff Involved in Research and Training Abroad

Staff Name	Destination	Duration Year/Months	Subject	Fellowship
1.Mr.Thavee T.	Tokai University & Wasino Engin- eering Co.,Ltd. (Japan)	1988/1	Manufacturing	JICA
2.Mr.Pornsak A.	Tokai University (Japan)	1990/6	Material Engineering	JICA
3.Dr.Mongkol M.	Tokai University & Tokyo Institute of Technology (Japan)	1990/1.5	Vibration and Lubrication	JSPS
4.Mr.Akradech S.	Tokai University (Japan)	1990/6	Thermodynamics	JICA
5.Mr.Somchai N.	Tokai University (Japan)	1990/6	Material Engineering	JICA
6.Dr.Yothin P.	Tokai University (Japan)	1990/3	Control Engineering	JICA
7.Mr.Thavee T.	Tokai University (Japan)	1990/1.5	Manufacturing Process	JSPS
8.Dr.Yothin P.	Tokai University (Japan)	1991/1.5	Control Engineering	JSPS
9.Dr.Jongkol N.	Tokai University (Japan)	1991/1.5	Modern Control	JSPS
10.Mr.Prasit K.	Tokai University (Japan)	1992/5	Welding Technology	JICA
11.Mr.Chamlong P.	Tokai University (Japan)	1992/12	Fluid Engineering	JICA
12.Mr.Thavee T.	Tokai University (Japan)	1992/1.5	Manufacturing Process	JSPS
13.Mr.Tawatchai N.	Tokai University (Japan)	1992/6	Internal Combustion Engine	JICA
14.Mr.Attason S.	Isuzu Co.,Ltd. & Tokai University (Japan)	1992/0.5	Internal Combustion Engine	Isuzu Co.Ltd.& Tokai Univ.

6. Educational Background of Staff

Mechanical Engineering Department

Degree	1989	1990	1991	1992
1. Doctor	2	1	1	1
2. Master	5	4	4	6
3. Bachelor	6	7	9	11
Total	13	12	14	18

Control Engineering Department

Degree	1988	1989	1990	1991	1992
1. Doctor	4	4	4	4	5
2. Master	3	4	4	4	5
3. Bachelor	5	4	4	2	3
Total	12*	12*	12*	10*	13*

Remark * Three Staff(Mechatronics) from Control Engineering Department are joining the Expansion Project in the Mechanical Engineering Field as counterparts.

7. Research Funds

(BAHT)

Budget Source	1888/1989	1989/1990	1990/1991	1991/1992	1992/1993	Total
Thai Government		140,000 (1)				140,000 (1)
Isuzu Motors Co.,Ltd.			1,300,000 (2)	100,000 (1)	200,000 (1)	1,600,000 (4)
Sodick Co.,Ltd.			2,600,000 (1)			2,600,000 (1)
Minebea Co.,Ltd.				240,000 (2)		240,000 (2)
Thai-Asean Research Fund					200,000 (1)	200,000 (1)
Total		140,000 (1)	3,900,000 (3)	340,000 (3)	400,000 (2)	4,780,000 (9)

(Research Topics)

1. Thai Government

FY1989/1990

1) Computer Control of Water-Level in Two Connected Tanks System 140,000 Bt Dr.Mongkol

2. Isuzu Motors Co.,Ltd.

FY1990/1991

1) Automotive Engineering 100,000 Bt Mr.Attason
2) Internal Combustion Engine 1,200,000 Bt Mr.Chinda

FY1991/1992

1) Automotive Engineering 100,000 Bt Mr.Attason
Mr.Tawatchai

FY1992/1993

1) Automotive Engineering 200,000 Bt Automotive Staff

3. Sodick Co.,Ltd.

FY1990/1991

1) Optimum Parameter of EDM Wire Cut	100,000 Bt	Mr.Thavee
2) EDM Wire Cut Machine	2,500,000 Bt	Mr.Thavee

4. Minebea Co.,Ltd.

FY1991/1992

1) Vibration in Small Ball Bearing	120,000 Bt	Dr.Mongkol
2) Closed Loop Control of Stepping Motor	120,000 Bt	Dr.Yothin

5. Thai-Asean Research Fund

FY1992/1993

1) Wind Velocity Measurement at High Attitude in Thailand	200,000 Bt	Dr.Mongkol
---	------------	------------

資料3. KMITL卒業生の主な就職先へのインタビュー結果

本調査は、協力4分野のKMITL卒業生が就職している主な企業等、各8～9社に対し、以下の質問事項を中心にインタビューしたものである。実際のインタビューは、各分野の長期専門家およびカウンターパートが、企業を訪問して行われた。

1. インタビューに応じた
 - ・ 企業名
 - ・ 氏名（役職）
 - ・ 企業所在地
2. KMITL卒業生に対する評価（点数制）
3. その他コメント

なお、卒業生に対する評価は、この5年間のプロジェクトの結果とは必ずしも言えず今までのKMITLへの協力全体の結果であろう、との議論があったことを、付記しておく。

QUESTIONNAIRE ABOUT KMITL GRADUATES
Computer Engineering Department

1. Person Interviewed

(1) Datamat Limited

Mr. Paisarn Sinthana
Department Manager

1927-1937 Petchaburi ext. Rd., Bangkok 10310
Tel. 3146655 Fax. 3191273

(2) Sahaviriya OA Group of Co. Ltd.

Mr. Preecha Potitappa
Special Assistant to Executive Director

28/1 Prapawit Building, Surasak Rd., Silom Bangkok 10500
Tel. 2383070, 2360295 Ext. 1900
Fax. Overseas. 662-2366954 Local. 2365960

(3) The communications Authority of Thailand

Mr. Damnoen Kaewthawee
Director

Policy and Planning Division Bangkok 10002, Thailand
Tel. 5735468, 573009 Ext. 3533 Fax. 5735468

(4) SCT Computer Co., Ltd.

Ms. Siripa Sapsirin
System Engineering-AS/400 Technical Division

S.P. Building 11 Fl., 388 phaholyothin Rd., Bangkok 10400
Tel. 2730037, 2730564 Fax. (02)2730563

(5) The Siam Cement Co., Ltd.

Mr. Pongrat Satayarat
Personal - Central office department Manager

1 Siam Cement Rd., Bangsue, Bangkok 10800
Tel. 5863443

(6) IBM Thailand Co., Ltd.

Mr. Pinyo Faromkhao
Policy Level Marketing

388 Phaholyothin Rd., Bangkok 10400
Tel. 2730041, 2730042, 2734282 Fax. 2730624

(7) International Research Corporation Ltd.

Mr. Verathorn Kitbumroong
Senior Engineer R&D Department
EMI Theatre 33/3-5 Phayathai Rd., Bangkok 10400
Tel. 2483311 Fax. 2476402

(8) Telephone Organization of Thailand

Mr. Sumrej Srestasathiern
Project Manager Rural Telecommunications Project

Tel. (02) 2551159

(9) Tavon Computer Co., Ltd.

Mr. Panom Petchjatuporn
R&D Manager

316/2-3 Sukhumvit Soi 22 Sukhumvit Rd., Bangkok 10110
Tel. 2589863, 2581099, 2592766 Fax. 2592780

2. Opinions on KMITL Graduates' Ability

(1) Individual Company

Characteristics	Company No.									Average Point
	1	2	3	4	5	6	7	8	9	
1) Theoretical knowledge	4	4	4	3	4	5	5	5	3	4.1
2) Technical application expertise	4	3	5	5	4	5	4	5	5	4.4
3) Administrative capability	3	2	3	2	4	3	3	4	5	3.7
4) English competence	3	2	4	1	3	3	3	4	2	2.8
5) Initiative	4	5	4	4	4	4	3	4	3	3.9
6) Responsibility	4	4	4	4	4	4	3	4	4	3.9
7) Enthusiasm in working	4	4	5	4	4	4	3	4	3	3.9
8) Enthusiasm in learning	4	4	5	4	4	4	3	4	3	3.9
9) Human relations with other staff	4	2	5	5	5	3	4	3	4	3.9
10) Adjustment	4	3	5	5	4	4	4	3	4	4.0
Total Points by each company	38	33	44	37	40	39	35	40	36	

Note : .Point shows Excellent :5 Good :4 Normal :3 Poor : 2 Problem :1

(2) Distribution

Characteristics	Evaluation				
	Excellent	good	Normal	Poor	Problem
1) Theoretical knowledge	3	4	2		
2) Technical application expertise	5	3	1		
3) Administrative capability	1	2	4	2	
4) English competence		2	4	2	1
5) Initiative	1	6	2		
6) Responsibility		8	1		
7) Enthusiasm in working	1	6	2		
8) Enthusiasm in learning	1	6	2		
9) Human relations with other staff	3	3	2	1	
10) Adjustment	2	5	2		

Note : Figure shows the number of companies which marked on each grade.

3. Other Comments

- (1) At present, KMITL graduates are top level same as CU, But, if KMITL will not proceed research work, it will lose the reputation.
- (2) To improve English conversation ability (3 companies)
- (3) To create graduates who are not seeking only for higher salary
- (4) To create more flexible thinking graduates. Sometimes they don't have capability of application.
- (5) Some years ago graduates did not understand research. But now research is more necessary to foster capability to solve problems of new technology. (2 companies)
- (6) To emphasize more theoretical education rather than technical expertise.
- (7) To produce more graduates, keeping the quality.
- (8) To have more new computer, electronics and communication equipment.
- (9) To have up-to-date reference books in library.
- (10) To have more modern and practical course such as object oriented concept that could be applied to use.
- (11) To have more elective courses.
- (12) To emphasize more computer engineering rather than computer science. To have more practical course in which case study are given for training in real company situation
- (13) To keep emphasis on publicity such as exhibition and PR.
- (14) To keep eagerness for introduction of new equipment and technology, maintaining good relationship with Japan.
- (15) To emphasize more modern and practical education
- (16) To produce more hardware engineer in electronics.

QUESTIONNAIRE ABOUT KMITL GRADUATES
(Telecommunication Engineering Department)

1. Person Interviewed

(1) NEC Engineering (Thailand) Co. Ltd.

Mr. Etsuo Ikeda
Manager, Installation Engineering Department

1549/5 2nd Fl. Oscar Center, New Petchaburi Rd., Phayathai, Bangkok
Tel. 253-2061 Fax. 253-2050

(2) AT&T (Thailand) Inc.

Mr. Kobchai Ruangprasert
Assistant Director Network Planning

74 Soi Lang Suan, Ploenchit Rd., Pathum Wan, Bangkok 10330
Tel. 254-4026 Fax. 254-4025

(3) SMART Corporation Ltd.

Mr. Kitivech Sudbuntad
General Manager Telecommunications Division

37/1 Moo 2 Phaholyothin Rd., Klong 1, Klongluang, Pathumthanee, 12120
Tel. 516-9327 Fax. 516-1594

(4) JASMINE International Co., Ltd.

Mr. Terasak Jerauswapong
Assistant Vice President, Service Department

333 Laksi Plaza 6th Fl. Tower 2, Choengwatana Rd., Donmuang, Bangkok 10210
Tel. 576-0200 Fax. 576-0198

(5) FUJIKURA (Thailand) Ltd.

Mr. Minoru Endo
Assistant Manager Production Engineering Department

Mr. Chartchai Sathawong
Manager Administration department

101/2 Moo 20 Klongluang, Navanakorn Industrial Estate, Pathumthani 12120
Tel. 529-3523 Fax. 529-0806

(6) TELECOMMUNICATION ORGANIZATION OF THAILAND(TOT)

Mr. Phairoj Suksombati
Head of Division of Construction Program Development

6th Fl. Head Office, 89/2 M.3 Chaeng Wattana Rd., Bangkok 10210
Tel. 574-9481, 505-2591 Fax. 574-9519

(7) ERICSSON Telephone Corporation Far East AB

Mr. Chongyuth Nimsamutra
System Engineering Manager

99/349 Chaengwattana Rd., Donmuang, Bangkok 10210
Tel. 574-0333 Fax. 574-3678

(8) United Communication Industry Co., Ltd.

Mr. Visit Somboon
Assistant Vice President

22 Phahonyothin Rd., Soi 11, Phaya Thai, Bangkok 10400.
Tel. 215-0684 Fax. 280-2758

2. Nature of Company

Name of Company	Employees	Capital	Organization	Background
1. NEC	66	8 MBt	Engineering & Service	Japan
2. AT&T			Engineering & Service	US
3. SMART	67	150 MBt	Manufacture	Thailand
4. JASMINE			Engineering & Service	Thailand
5. FUJIKURA	3,000	500 MBt	Manufacture	Japan
6. TOT			Public Corporation	Thailand
7. ERICSSON			Manufacture	Sweden
8. UUCOM			Engineering & Service	US

* UCOM : United Communication Industry Co., Ltd.

3. Number of Applicants from KMITL in 1992

1) NEC	1(employed : 1)	2) AT&T	0
3) SMART		4) JASMINE	200
5) FUJIKURA		6) TOT	
7) ERICSSON	100	8) UCOM	

4. Total Number of Staff Graduated in KMITL

1) NEC	4	2) AT&T	5
3) SMART	12/13	4) JASMINE	45(36 in 1992)
5) FUJIKURA	7	6) TOT	190
7) ERICSSON	35	8) UCOM	25

5. Highest Position of KMITL Graduates : () shows the age or the graduate year

1) NEC	: Assistant Manager/Installation Engineering Department (34)
2) AT&T	: Assistant Director/Network Planning (39)
3) SMART	: General Manager/Telecommunications Division (1983)
4) JASMINE	: Assistant Vice President/Service Department (1985)
5) FUJIKURA	: Engineer Class II (1986)
6) TOT	: Exective Engineer/Administrator Grade I
7) ERICSSON	: Project Sales Manager/Business Communication Department
8) UCOM	: Assistant Vice President

6. Starting Salary of Engineer

1) NEC	12,000 Bt	2) AT&T	15,000 Bt
3) SMART	15,000 Bt/12,000 Bt	4) JASMINE	13,000 Bt
5) FUJIKURA	12,000 Bt	6) TOT	5,850 Bt
7) ERICSSON	12,500 Bt	8) UCOM	13,500 Bt

7. Opinions on KNITL Graduates' Ability

(1) Individual Company

Characteristics	Company No.								Average Point
	1	2	3	4	5	6	7	8	
1) Theoretical knowledge	4	4	4	4	4	4	4	4	4.0
2) Technical application expertise	4	4	4	4	4	5	4	2	3.9
3) Administrative capability	3	3	3	3	3	4	3	3	3.1
4) English competence	3	3	3	3	3	4	4	3	3.3
5) Initiative	4	4	4	4	3	4	3	3	3.6
6) Responsibility	4	4	4	5	4	4	3	3	3.9
7) Enthusiasm in working	4	4	5	4	3	4	3	2	3.6
8) Enthusiasm in learning	4	4	5	4	3	4	4	3	3.9
9) Human relations with other staff	5	4	3	3	4	4	3	4	3.8
10) Adjustment	4	4	5	4	4	4	3	3	3.9
Total Points by each company	39	38	40	38	35	41	34	30	36.9

Notes • Point shows Excellent :5 Good :4 Normal :3 Poor :2 Problem :1

(2) Distribution

Characteristics	Evaluation				
	Excellent	good	Normal	Poor	Problem
1) Theoretical knowledge		8			
2) Technical application expertise	1	6		1	
3) Administrative capability		1	7		
4) English competence		2	6		
5) Initiative		5	3		
6) Responsibility	1	5	2		
7) Enthusiasm in working	1	4	2	1	
8) Enthusiasm in learning	1	5	2		
9) Human relations with other staff	1	4	3		
10) Adjustment	1	5	2		

Notes • Figure shows the number of companies which marked on each grade.

(3) Suggestion for improvement of KNITL graduates' ability

- 1) English ability should be improved. (NEC, AT&T, JASMINE)
- 2) Administrative capability should be requested more than now. (AT&T)
- 3) Skills on problem solving and decision-making ability might be improved.(ERICSSON)

8. Tendence for recruitment

- | | |
|-------------|---|
| 1) NEC | Telecom. or Electronics Dept. 2 for installation, 2 for O/M |
| 2) AT&T | Depend on the coming project(unknown) |
| 3) SAMART | Telecom. Dept. : 6 engineers |
| 4) JASMINE | Telecom/Electronics/Computer/Control : 100 engineers |
| 5) FUJIKURA | 6 engineers (Design engineers : 3, Product engineers : 3) |
| 6) TOT | 20 engineers |
| 7) ERICSSON | 8 to 10 Telecom/Electronics engineers |
| 8) UCVON | 20 engineers of telecommunications and/or electronics |

9. Required attributes

- 1) Business communication : Installation & service engineer (ERICSSON)
Public telecommunication : Marketing engineer (ERICSSON)
- 2) Basic engineering knowledge is enough. Responsibility, hard-work and cooperation is more important than the other characteristics. (FUJIKURA)
- 3) Enthusiasm in learning new technologies by himself and management ability is requested. (JASMINE)
- 4) Basic knowledge in telecommunications and knowledge in real telecommunication products. (SAMART)
- 5) Theoretical knowledge, operation of equipment and system, good human relations with customers and english ability are required. (UCVON)

10. Other comments

- 1) Engineering education which is applicable for practical field is desirable. (NEC)
- 2) English course should be more strengthened. (AT&T)
- 3) Management&administration course should be arranged in order to enhance the students' administration ability. (AT&T)
- 4) The engineering education on practical telecommunication systems, which we learned in KMITL, was very useful for the practical jobs in the company. (AT&T)
- 5) Computer operation ability is very important in modern business. (AT&T)
- 6) Experience of experiments by using the practical telecommunication systems and measuring instruments in Telecom. Lab. and the Project was very useful for and also give us the superior ability in the practical jobs in the company. (JASMINE)
- 7) It is desired that the telecommunication laboratory in KMITL should include the experiments on new technologies such as ISDN, Digital Satellite Communications and Mobile Telephone Technologies. (JASMINE)
- 8) KMITL should start cooperative research and development activities with private companies regarding the development of telecommunication products and systems. (SAMART)
- 9) We recommend that KMITL shall accept engineers from companies as invited lecturers.
- 10) Education on computer hardware technology is required. (FUJIKURA)
- 11) Demand of engineers in the field of public telecommunications grows up rapidly, therefore the educational courses and research relating to the modern telephony technology might be added in the KMITL curriculum and research activities. (ERICSSON)
- 12) More individual capabilities on intellectual ability, people orientation, perspective and result orientation might be prepared for KMITL graduates. (ERICSSON)
- 13) Technical knowledge about trunk radio, digital filter, microwave system, satellite

- system, PABX and mobile data system are more required.(UCOM)
- 14) Students well balanced with the knowledge of theory & system and system operation & installation.

QUESTIONNAIRE ABOUT KMITL GRADUATES
(Industrial Technology Department)

1. Person Interviewed

(1) Aeronautical Radio of Thailand Ltd.

Mr. Kosol Kruenopakun
Adjutant

102 Ngamduplee, Tungmahamek, Bangkok, 10120
Tel. 287 3531-41 Ext. 2302

(2) Telecommunication Training Center

Mr. San Jultep
Head of Training Center

Ngamwongwan Road, Nondhaburi
Tel. 589 0070

(3) Summit Electronic Components Co., Ltd.

Mr. Tanate Suphathanukul
Factory Manager

32-33 Moo 17, Bangna-Trad Road, Km. 11, Bangplee, Samutprakarn, 10540
Tel. 316 2440-7

(4) Sony Siam Industries Co., Ltd.

Mr. Chairaj Thamwissawa
EDP Manager

101/29 Navanakorn Industrial Estate, Phaholyothin Road, Pathumthani, 12120
Tel. 259 1463-6

(5) Toshiba Semiconductor (Thailand) Co., Ltd.

Mr. Ikuo Satoh

Executive Vice President

Ms. Noreerat Noparatanaaraporn

Senior Manager

135 Moo 5, Bangkadi Industrial Park, Tivanon Road, Pathumthani, 12000

Tel. 501 1030

(6) Bangkok Broadcasting & TV Co., Ltd.

Mr. Saran Virutamavongsa

Senior Engineer

998/1 Phaholyothin Road, Bangkok, 10900

Tel. 278 1255

(7) Sinobrit Ltd.

Mr. Chittaporn Lawpradist

Customer Engineer Manager

133 Vibhavadi Road, Samsennai, Phayathai, Bangkok, 10400

Tel. 248 8111

2. Opinions on KMITL Graduates' Ability

Characteristics	Company No.								Average Point
	1	2	3	4	5	6	7	8	
1) Theoretical knowledge	4	4	4	4	3	4	4		3.9
2) Technical & application expertise	3	5	4	4	4	4	4		4.0
3) Administrative capability	3	4	3	3	3	4	4		3.4
4) English competence	3	3	3	3	2	3	3		2.8
5) Initiative	3	4	3	4	4	5	4		3.9
6) Responsibility	4	4	4	4	4	4	4		4.0
7) Enthusiasm in working	4	4	4	4	4	4	5		4.1
8) Enthusiasm in learning	4	4	4	4	5	3	5		4.1
9) Human relations with other staff	4	4	4	4	3	4	5		4.0
10) Adjustment	4	4	4	4	3	4	4		3.9
Total points by each company	36	40	37	38	35	39	42		

Notes : Point shows Excellent: 5 Good: 4 Normal: 3 Poor: 2 Problem: 1

3. Other Comments

- (1) The student should study more English language and should know about the progress of the business not Engineering only.
- (2) The number of Engineering graduate should be more increased.
- (3) Every thing is OK except English language
- (4) The student should have more practical training with outside company or factory.
- (5) There was a problem on the new engineer who intended to charge to other company after training in Japan.
- (6) KMITL graduates are excellent on the practical working, but are

excepted on the management more.

- (7) The students should be trained to be the leader that can join with other and ready to open their mind for discussion.
- (8) Education and research of KMITL has been doing well.

QUESTIONNAIRE ABOUT KMITL GRADUATES

(Mechanical Engineering Department)

1. Person Interviewed

- (1) Isuzu Technical Center Co.,Ltd.

Mr.Yasunori Itoh

Executive in Charge

17th Floor, Pacific Tower, 21 Vibhavadee-Rangsit Road, Bangkok 10900

Tel. 273-8591

- (2) Sanyo Universal Electric Co.,Ltd.

Mr.Supoj Kunchai

Assistant Manager, Compressor Department

Sukhumvit 103, Bangkok

Tel. 326-0120

- (3) Sodick(Thailand) Co.,Ltd.

Mr.Takashi Yamamoto

Director

Room 12A/3 Floor 12A, Central Chidlom Tower, 22 Soi Somkid, Pleonchit Road, Bangkok 10330

Tel. 254-7117

- (4) B.GRIMM Engineering System Co.,Ltd.

Mr.Chalermchai Thawon

Director

1643/4 New Petchburi Road, Bangkok 10310

(5) Building Construction Management Co.,Ltd.

Mr.Pairoj Mahapant

Managing Director

388, 7th Floor, IBM Building, Phaholyothin Road, Bangkok 10400

Tel. 273-0046

(6) Thai Auto Works Co.,Ltd.

Mr.Preecha Changaroon

Director

187 Moo 25, Old Railway Road, Amphur Muang, Samut-Prakarn 10270

Tel. 386-1372

(7) The Siam Cement Co.,Ltd.

Mr.Rungsan Siriakarapisal

Engineering & Cement Plant Section Head

1 Siam Cement Road, Bangsue, Bangkok

Tel. 586-3192

2. Opinions on KMITL Graduates' Ability

Characteristics	Company No.							Average Point
	1	2	3	4	5	6	7	
1) Theoretical knowledge	4	3	4	3	4	3	4	3.6
2) Technical & application expertise	3	3	4	3	4	3	4	3.4
3) Administrative capability	3	3	3	3	3	2	3	2.9
4) English competence	3	3	3	2	4	3	3	3.0
5) Initiative	4	4	4	4	4	4	4	4.0
6) Responsibility	4	4	3	4	4	2	5	3.7
7) Enthusiasm in working	4	4	3	4	4	2	5	3.7
8) Enthusiasm in learning	4	4	3	4	4	4	5	4.0
9) Human relations with other staff	4	4	4	4	5	2	3	3.7
10) Adjustment	3	4	3	3	4	2	4	3.3
Total Points by each company	36	36	34	34	40	27	40	

Notes: Point shows Excellent: 5 Good: 4 Normal: 3 Poor: 2 Problem: 1

3. Other Comments

- 1) KMITL graduates are generally excellent. The following points are disadvantages of them as compared with other high ranking universities graduates: (a) Engineering sense(Principle of Mechanical Engineering) (b) English ability (c) General knowledges.
- 2) To improve the disadvantage points as mentioned in (1).
- 3) Department should promote research in factory automation and pollution control.
- 4) KMITL graduates work well together with workers as compared with other universities graduates.

- 5) Disadvantage is the shortage of general knowledges on engineering, science and language.
- 6) KMITL should teach the fundamental concept of engineering not only practice.
- 7) Engineers from KMITL have better responsibility than engineers from other universities.
- 8) KMITL should have an independent research institute.
- 9) Graduates should give more contribution to the public.
- 10) Trained to be more precise engineers.
- 11) Department should concentrate teaching in the basic concepts of mechanical engineering and the knowledge of main industrial process.
Do not concentrate too much in computer application.
- 12) Department should have the training course in engineering moral.
- 13) Prepare the students to come to work. Not to come to study only.
- 14) Department should have more research in the future, more basic engineering knowledge, and more proficiency in engineer.
- 15) Graduates should have continuity in discipline.

JICA