

Appendix 10 : Publication of Annual Research Report

รายงานวิจัยประจำปี 2537

*RESEARCH REPORT*

*1994*

Vol. 1



คณะวิศวกรรมศาสตร์

FACULTY OF ENGINEERING

มหาวิทยาลัยธรรมศาสตร์ ศูนย์รังสิต

THAMMASAT UNIVERSITY, RANGSIT CAMPUS

THAILAND

๑๑

**รายชื่อบทความผลงานวิจัย**  
**LIST OF FULL PAPERS**

หน้า (PAGE)

**DEPARTMENT OF CHEMICAL ENGINEERING**

1.	Self-Carbonized Traditional Cooking Stove ( In Thai )	9
2.	Self-Carbonized Traditional Cooking Stove	21
3.	Synthesis and Characterization of the Nickel-Containing Silicoaluminophosphate (SAPO) -34 Catalyst	29

**DEPARTMENT OF CIVIL ENGINEERING**

1.	A Comparison of Uncertainties in Construction Projects in Thailand and the U.K.	39
2.	Application of Remote Sensing with Geographical Information System to Determine Annual Discharge for a Small Watershed	48
3.	High Performance Concrete Containing Modified Rice Husk Ash	52
4.	High Strength Concrete Using Modified Rice Husk Ash	65
5.	Influence of Hot Air Heating on Strength Development of Rice Husk Ash Concrete	77
6.	Influence of Rice Husk Ash on Properties of Sisal Pulp-Mortar Composites	84
7.	2-D Mathematical Modelling for Dam Break Wave Propagation in Supercritical and Subcritical Flows	102
8.	Mechanical Properties of Sisal Fiber-Mortar Composites	110
9.	Multilevel Scheme for Optimum Design of Highway Bridges	126
10.	Present Situation of Concrete Codes in ASIA	132
11.	Response Behavior of RC Elevated Bridge under Severe Earthquake	138
12.	Suspended Sediment Concentration Profiles under Non-breaking and Breaking Waves	147
13.	Vehicle-Bridge Dynamic Interaction	162

หน้า (PAGE)

14. Vertical Distribution of Suspended Sediment Concentration in and outside Surf Zone 168

**DEPARTMENT OF ELECTRICAL ENGINEERING**

1. Electrocardiograph 185

**DEPARTMENT OF INDUSTRIAL ENGINEERING**

1. The Influence of Soft Filler Characteristics and Fusion Level on the Impact Strength of Poly (Vinyl Chloride) 199

**DEPARTMENT OF MECHANICAL ENGINEERING**

1. Application of the Finite Element Method to Cracked Plates under Uniformly Distributed Load 211

รายงานวิจัยประจำปี 2538

*RESEARCH REPORT*

*1995*

*Vol. 2*

คณะวิศวกรรมศาสตร์

*FACULTY OF ENGINEERING*

มหาวิทยาลัยธรรมศาสตร์ ศูนย์รังสิต

*THAMMASAT UNIVERSITY, RANGSIT CAMPUS*

*THAILAND*

รายชื่อบทความผลงานวิจัย  
LIST OF FULL PAPERS

		หน้า (PAGE)
<b>DEPARTMENT OF ELECTRICAL ENGINEERING</b>		
1.	Neural Controller for Boost Converter in Simulink (Piboon Nakmahachalasint)	11
<b>DEPARTMENT OF INDUSTRIAL ENGINEERING</b>		
1.	Dynamic Process Layout Planning (Pongchanun Luangpaiboon and Peerayuth Charnsethikul)	19
<b>DEPARTMENT OF CIVIL ENGINEERING</b>		
1.	Analytical Investigation on the Response of a Very Long Suspension Bridge under Gusty Wind (Miyata T., Yamada H., Boonyapinyo V. and Satos J.C.)	37
2.	A Review of Mechanical Properties of Natural Fibers in Developing Countries (Burachat Chatveera, Pichai Nimityongskul and Stephen O. Ogunlana)	51
3.	Construction Management in Large Building Construction Projects (Boonsap Witchayangkoon and Burachat Chatveera)	91
4.	Dynamic Analysis of Cable-Stayed Bridges including Cable Motion by Galerkin Method (Virote Boonyapinyo, Toshio Miyata, Hitoshi Yamada and Eiichi Sasaki)	101
5.	Dynamics of Cable-Stayed Bridges including Cable Motion by Dynamic Cable Stiffness Matrix (Virote Boonyapinyo, Toshio Miyata, Hitoshi Yamada and Zhensan Peng)	103
6.	Elemental Three Dimensional Dynamic Behavior of Fill Dam (Hiroyuki Watanabe, Zengyan Cao and Kenji Kikuchi)	105
7.	JICA Projects Evaluation Study on Japan Foundation Project: The Japanese Studies Center, Thammasat University (Uruya Weesakul, Chaisak Sripadungtham and Supot Teachavarasinskul)	113

	หน้า (PAGE)
8. JICA Projects Evaluation Study on The Faculty of Engineering at Thammasat University (Uruya Weesakul, Chaisak Sripadungtham and Supot Teachavarasinskul)	128
9. JICA Projects Evaluation Study on Supply of Additional Equipment for the Urgent Bopreholes Projects in the Drought-Stricken Rural Areas (Supot Teachavarasinskul, Chaisak Sripadungtham and Uruya Weesakul)	143
10. Estimation of Runoff for Ungauged Basin using Basin Physical Characteristics derived from Satellite Imagery (Uruya Weesakul)	150
11. Evaluation Study on Bang Nara Irrigation and Drainage Project, Narathiwat Province (Chaisak Sripadungtham, Supot Teachavarasinskul and Uruya Weesakul)	164
12. Real Time Flood Forecasting Modeling in the South of Thailand (Uruya Weesakul)	173
13. Evaluation Study on the Sewerage Development in Lower Chao Phraya River, Thailand (Chaisak Sripadungtham, Supot Teachavarasinskul and Uruya Weesakul)	179
14. Assessment of Water Resources Potential in Upper Northeastern Region of Thailand (Uruya Weesakul and Chaisak Sripadungtham)	186
15. The Applicability of Real Time Flood Forecasting Model: A Case Study in Thailand (Uruya Weesakul and Chaisak Sripadungtham)	200
16. Mechanical Behavior of Sisal Pulp-Mortar Composites (Burachat Chatveera and Pichai Nimityongskul)	206
17. Mix Design of Mortar by Multiple Regression (Somnuek Praparitanatorn and Wanchai Sata)	216
18. Nonlinear Structural Instability of Long-Span Cable-Stayed Bridges under Gravity and Wind Loads (Virote Boonyapinyo, Hitoshi Yamada and Toshio Miyata)	223

	หน้า (PAGE)
19. Study on A Three-Phase Fluidized-Bed Reactor for Biological Wastewater Treatment (Krittaya Lertpocasombut, Micheal Rouston and Bernard Capdeville)	237
20. Ultimate Strength of Cable-Stayed Bridges Under Static Aerodynamic Forces (Virote Boonyapinyo, Toshio Miyata and Hitoshi Yamada)	241
21. Vibration Modes of Rockfill Dam Based on the Observations of Microtermors and an Earthquake (H. Watanabe, K. Kikichi and Z. Cao)	247
22. Volume Stability of Cement Paste and Mortar Using Lignite Fly Ash (Somnuk Tangtermsirikul and Burachat Chatveera )	255
23. Wind-Induced Nonlinear Lateral-Torsional Buckling of Cable-Stayed Bridges (Virote Boonyapinyo, Hitoshi Yamada and Toshio Miyata)	261

## Appendix 11 : Staff Development and Staffing Plan

Summary of the number of lecturer, Faculty of Engineering  
Thammasat University  
(as of December 1, 1994)

Department	Staying			Total Staying	Studying abroad	Total
	B	M	D			
Electrical Engineering	4	5	0	9	9	18
Industrial Engineering	4	5	0	9	3	12
Civil Engineering	2	8	5	15	2	17
Chemical Engineering	4	2	0	6	1	7
Mechanical Engineering	0	1	0	1	2	3
<b>Total</b>	<b>14</b>	<b>21</b>	<b>5</b>	<b>40</b>	<b>17</b>	<b>57</b>

B : Bachelor M : Master, D : Doctor

Summary of the number of lecturer, Faculty of Engineering  
Thammasat University  
(as of December 31, 1996)

Department	Staying			Total Staying	Studying abroad	Total
	B	M	D			
Electrical Engineering	4	8	0	12	6	18
Industrial Engineering	3	8	1	12	4	16
Civil Engineering	0	1	8	9	8	17
Chemical Engineering	2	1	1	4	5	9
Mechanical Engineering	3	5	0	8	0	8
<b>Total</b>	<b>12</b>	<b>23</b>	<b>10</b>	<b>45</b>	<b>23</b>	<b>68</b>

B : Bachelor M : Master, D : Doctor



## Faculty Profile

(as of 30 June, 1995)

	EE	IE	CE	ChE	ME	Total
Prof.						0
Assoc.			1(M-1)			1
Asst.Prof.			1(D-1)		1(M-1)	2
Lecturer	(10)D-0	(9)D-1	(13)D-5	(6)D-0	(3)D-0	41
	M-6	M-4	M-6	M-2	M-2	
	B-4	B-4	B-2	B-4	B-1	
Total	(10)D-0	(9)D-1	(15)D-6	(6)D-0	(4)D-0	44
	M-6	M-4	M-7	M-2	M-2	
	B-4	B-4	B-2	B-4	B-2	
Studying Abroad	6	3	2	2	2	15

### ABBREVIATION

Prof. : Professor

Assoc.Prof. : Associate Professor

Asst.Prof. : Assistant Professor

D : Doctoral Degree holder

M : Master Degree holder

B : Bachelor Degree holder

EE : Electrical Engineering

IE : Industrial Engineering

CE : Civil Engineering

ChE : Chemical Engineering

ME : Mechanical Engineering

### Faculty Profile

(as of 31 March, 1997)

	EE	IE	CE	ChE	ME	Total
Prof.						0
Assoc.						0
Asst.Prof.			2(D-1) (M-1)		1(M-1)	3
Lecturer	(17)D-0 (M-9) (B-8)	(16)D-2 (M-6) (B-8)	(15)D-7 (M-3) (B-5)	(8)D-0 (M-3) (B-5)	(7)D-0 (M-4) (B-3)	63
Classification by degrees	17(D-0) (M-9) (B-8)	16(D-2) (M-6) (B-8)	17(D-8) (M-4) (B-5)	8(D-0) (M-3) (B-5)	8(D-0) (M-5) (B-3)	66
Studying Abroad	6	7	7	5	1	26

#### ABBREVIATION

Prof. : Professor  
 Assoc.Prof. : Associate Professor  
 Asst.Prof. : Assistant Professor  
 D : Doctoral Degree holder  
 M : Master Degree holder  
 B : Bachelor Degree holder  
 EE : Electrical Engineering  
 IE : Industrial Engineering  
 CE : Civil Engineering  
 ChE : Chemical Engineering  
 ME : Mechanical Engineering

Summary of the needs of scholarships for pursuing higher degree in the period of 1995-1999

(as of December 1994)

	EE		IE		CE		ChE		ME		Total	
	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT
1995	-	-	-	1	1	1	-	-	-	-	1	2
1996	3	-	2	-	1	-	3	-	-	-	9	-
1997	4	-	4	-	3	-	2	-	-	-	13	-
1998	3	-	-	-	2	-	2	-	-	-	7	-
1999	-	-	2	-	2	-	2	-	-	-	6	-
Total	10	-	8	-	9	-	9	-	-	-	36	2

FT = Full Time Study

PT = Part Time Study such sandwich program for Doctoral Degree

- Do not include the needs of scholarships of Mechanical Engineering Department

Summary of the staying faculty staff in the period of 1995-1999

(as of December 1994)

	EE			IE			CE			CHE			ME			Total*			Ratio**		
	B	M	D	B	M	D	B	M	D	B	M	D	B	M	D	B	M	D	B	M	D
1995	5	4	-	4	3	-	-	7	5	6	2	-	-	-	-	15	16	5	4.2	4.4	1.4
1996	6	3	1	3	4	1	-	8	5	5	1	-	-	-	14	16	7	3.8	4.3	1.9	
1997	3	3	3	2	4	2	-	7	6	6	-	-	-	-	11	14	11	3.1	3.9	3.1	
1998	-	3	6	2	4	5	-	7	10	6	-	-	-	-	8	14	21	1.9	3.3	4.9	
1999	-	3	8	-	4	5	-	5	11	6	-	2	-	-	6	12	26	1.4	2.7	5.9	

B = Bachelor's Degree

M = Master's Degree

D = Doctoral Degree

\* Do not include the amount of faculty staff from Mechanical Engineering Department

\*\* Expected Ratio of B:M:D of MUA at the end of 2001 is 0.5:6:3.5

## Appendix 12 : Student Enrollment Plan

Student Enrollment Plan in the period of 1995-1999 Educational Year  
(as of September 9, 1996)

Department	1995	1996	1997	1998	1999
Electrical Engineering	40	40	50	50	50
Industrial Engineering	40	40	60	60	60
Civil Engineering	40	60	60	60	60
Chemical Engineering	40	25	40	40	40
Mechanical Engineering	20	20	20	20	20
<b>Total</b>	<b>180</b>	<b>185</b>	<b>230</b>	<b>230</b>	<b>230</b>

The number of Students divided by department, year & sex  
(as of September 9, 1996)

Department	Year4		Year3		Year2		Year1		Total	
	M	F	M	F	M	F	M	F	M	F
Electrical Engineering	41	16	38	7	32	7	-	-	111	16
Industrial Engineering	29	5	31	3	4	3	-	-	81	11
Civil Engineering	39	4	41	3	44	4	-	-	124	21
Chemical Engineering	-	-	15	6	13	2	-	-	43	12
Mechanical Engineering	-	-	-	-	15	-	-	-	15	-
1st Year Student	-	-	-	-	-	-	141	20	141	20
<b>Total</b>	<b>124</b>	<b>15</b>	<b>125</b>	<b>19</b>	<b>125</b>	<b>16</b>	<b>141</b>	<b>20</b>	<b>515</b>	<b>71</b>
<b>Grand Total</b>									<b>585</b>	

## Appendix 13 : Number of Students in 1996

### Education Year

#### Number of Students in 1996 Educational Year

Department	First Year		Second Year		Third Year		Fourth Year		Total			
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female		
Electrical Engineering			32	7	39	7	45	2	42	110	16	126
Industrial Engineering			21	3	24	3	34	5	34	81	11	92
Civil Engineering			44	4	48	3	44	4	43	124	11	135
Chemical Engineering			13	2	15	6	20	4	19	42	12	54
Mechanical Engineering			15	-	15	-	-	-	-	15	-	15
First Year Students not to select												
Department yet	139	20	159							139	20	159
Total Common Students	139	20	159	16	141	19	143	15	138	511	70	581
*Students on Engineering Project (Nottingham Programme)												
Electrical Engineering	7	4	11	-	-	-	-	-	-	7	4	11
Industrial Engineering	4	6	10	-	-	-	-	-	-	4	6	10
Civil Engineering	10	3	13	-	-	-	-	-	-	10	3	13
Chemical Engineering	9	2	11	-	-	-	-	-	-	9	2	11
Mechanical Engineering	5	1	6	-	-	-	-	-	-	5	1	6
Total Special Students	35	16	51	-	-	-	-	-	-	35	16	51
Total Number of Students	174	36	210	16	141	19	143	15	138	546	86	632

Appendix 14 : Academic Exchange between  
Thammasat University and Tokyo Institute of Technology

AGREEMENT ON ACADEMIC EXCHANGE  
BETWEEN  
THAMMASAT UNIVERSITY  
AND  
TOKYO INSTITUTE OF TECHNOLOGY


Thammasat University and Tokyo Institute of Technology hereby agree to enter into this agreement to promote academic exchange between the two Universities.

1. Both Universities agree to promote the following activities:
  - (1) exchange of faculty members for teaching and research,
  - (2) exchange of students,
  - (3) activities such as collaborative research and symposia,
  - (4) exchange of academic materials, publications and information.
2. The realization of the above mentioned activities shall be based upon close communication and discussion between both universities.
3. This Agreement will be effective upon the date of signature by the representatives of the two Universities. It shall be subjected to review in five years hence and may be extended by mutual consent.

Date

Date: March 13, 1996

Noraniit Setabutr  
Rector  
Thammasat University

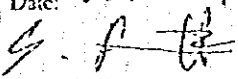
  
Tsutomu Kimura  
President  
Tokyo Institute of Technology

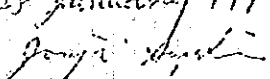
**Appendix 15 : Memorandum on Student Exchange Between  
Faculty of Engineering, Thammasat University and  
Faculty of Engineering, Saitama University**

MEMORANDUM ON STUDENT EXCHANGE BETWEEN  
FACULTY OF ENGINEERING, THAMMASAT UNIVERSITY  
AND  
FACULTY OF ENGINEERING, SAITAMA UNIVERSITY

This Memorandum serves the purpose of promoting exchange of students as stipulated in the Agreement on Academic Exchange between the Faculty of Engineering, Thammasat University and the Faculty of Engineering, Saitama University (hereafter the Agreement).

1. Both parties agree on exchange of students in accordance to the following conditions:
  - (1) The students participating in the exchange program (hereafter Exchange Student) shall have obtained admission to the host institute based on its selection criteria.
  - (2) The number of Exchange Students per year shall not be more than two students from each institute.
  - (3) The period of exchange for each Exchange Student shall be within one year.
  - (4) The status of the Exchange Student shall be that of a visiting foreign student at Thammasat University and of a special audit student at Saitama University.
  - (5) The host institute shall not charge the Exchange Student for application fee, admission fee and tuition fees.
  - (6) The host institute shall extend every possible effort to help the Exchange Student find adequate housing facilities.
  - (7) All expenses including board and lodging, cost of living, medical cost and insurance fee shall be the responsibility of the Exchange Student.
  - (8) Travel expenses shall be the responsibility of the Exchange Student or the home institute.
  - (9) Accreditation of the credits earned by the Exchange Student at the host institute shall be entrusted to the decision of the home institute.
  - (10) The Exchange Student shall be subject to the rules and regulations for students at the host institute.
  - (11) The Exchange Student shall possess sufficient language proficiency in order to attend lectures and conduct research at the host institute.
  - (12) The Exchange Student shall remain a candidate for graduation degree at the home institute and shall not be a candidate for degree at the host institute.
2. This Memorandum shall come into effect on the date on which it is signed by both parties, and shall be in effect within the effective period of the Agreement. The parties may propose amendments to this Memorandum. In addition, a party may seek to terminate the Memorandum with six months advance notice to the partner party prior to the planned date of termination.
3. This Memorandum is executed in both Japanese and English, with both texts being equally official.

Date: 26 March 1997  
  
Somnuk Prapananatorn  
Dean  
Faculty of Engineering  
Thammasat University

Date: 28 January 1997  
  
Jouji Suzuki  
Dean  
Faculty of Engineering  
Saitama University



## **Appendix 16 : Agenda of Steering Committee**

### **The 1st Steering Committee, August 10, 1994**

1. Invitation of Thai Counterpart Personnel for Training and Study in Japan.
2. Dispatch of Short-term Experts to Thammasat University Project.
3. Provision of Equipment and Machineries.
4. Technical Exchange Programme.
5. Seminar (or Special Lecture) Programme.
6. Supporting Programme for Development and Compilation of Textbook, Instruction Manual, ect.
7. Other Subjects under Consideration.
8. Some Subjects related to the Activity of JICA Experts.
9. Others.

### **The 2nd Steering Committee, October 13, 1994**

1. Budget necessary for the Implementation of the Project in 1995 Fiscal Year.
2. Publication of Textbook, Instruction Manual, etc. in 1995 Japanese Fiscal Year.
3. Technical Exchange Programme in 1995 Japanese Fiscal Year.
4. Grand Design on the future Development Programme for Faculty of Engineering, TU.
5. Effective Utilization of Equipment and Machinery to be provided under Japan's Grant Aid Programme.
6. Others.

**The 3rd Steering Committee, December 8, 1994**

1. JICA Training System.
2. Some Concepts on the Opening of Graduate School in Faculty of Engineering, TU.
3. Research Planning with Private Funds.
4. Mutual Cooperation Programme among Thai Universities (CU, KMIT, AIT, TU, etc.) at Graduate School Level.
5. Present and Future Staffing Plan in Faculty of Engineering, TU with an Emphasis on the Opening of Department of Mechanical Engineering, TU.
6. Outline of Exchange Programme between Faculty of Engineering, TU and University of Nottingham.
7. Others.

**The 4th Steering Committee, March 16, 1995**

1. Highlight on JICA's Project Leaders' Meeting for 1994 Japanese Fiscal Year (JFY) held in JICA HDQ, Tokyo.
2. Progress on Publication of Periodical Research Report by Faculty of Engineering (F.E.) of Thammasat University (TU).
3. Outline of "Joint Seminar Programme on Automobile Industry" to be jointly held by JICA Experts and Faculty Members of F.E. of TU.
4. Effective Utilization and Maintenance of Equipment and Machinery to be provided under both JICA's Technical Cooperation Programme and Japan's Grant Aid Scheme.
5. JICA's Training Programme for 1995 JFY for Faculty Members of TU.

6. Some Progress on the Establishment of Graduate School in F.E., TU.
7. Progress on Student Exchange Programme for 1995 Thai Fiscal Year (TFY) between TU and Nottingham University of United Kingdom.
8. Staffing Plan for 1995 TFY in F.E. of TU including Faculty Members to study abroad and Part-time Lecturers from outside.
9. Introduction to Academic Information Networks and Systems.
10. Planning and Formulation of Research Themes to be undertaken under the Guidance of JICA Experts.
11. Others.

**The 5th Steering Committee, May 16, 1995**

1. Visit of JICA's Consultation Study Team to the Faculty of Engineering, TU, in Late June, 1995.
2. Some Concepts on the Establishment of Education and Research Group System to be applied to the Faculty of Engineering, TU with the aims of effective and efficient Utilization of Human Resources.
3. Progress on the Publication of Annual Research Report to be published by the Faculty of Engineering, TU.
4. Proposal of the Publication of News Letter on the Activities of the Faculty of Engineering, TU.
5. Grant Aid and Technical Cooperation Equipment and Machinery.
6. Others.

**The 6th Steering Committee, September 19, 1995**

1. Progress on the Activities of the Project for Fiscal Year 1995.
2. Project Implementation Programme for Fiscal Year 1996.
3. Progress on the Installation of Grant-Aid Equipment and Preparation of its Handing - Over Ceremony.
4. Progress on the Establishment of Graduate School for FOE.
5. Preparation of Annual Research Report for 1996.
6. First Issuing of Newsletter for FOE (Composition of Editing Committee Members, ect.)
7. Handing - Over of Technical Cooperation Equipment.
8. Others.

**The 7th Steering Committee, November 27, 1995**

1. Progress and Review on the Activities of the Project for Japan's Fiscal Year 1995.
2. Preparation of the Activities of the Project for Japan's Fiscal Year 1996 and thereafter.
3. Progress on the Establishment of Graduate School to be managed jointly by FOE and IIT.
4. Research Grouping and Preparation of its Laboratory and Discussion Room.
5. Preparation and Formulation of Syllabus on Lecture for Student.
6. Preparation of Handing-over Ceremony of Grant Aid Equipment.
7. Others.

**The 8th Steering Committee, January 30, 1996**

1. Progress and Review on the Activities of the Project for Japan's Fiscal Year 1995.
2. Preparation of Project Implementation Programme for Japan's Fiscal year 1996.
3. Progress on the Establishment of Graduate School to be managed jointly by FOE and IIT.
4. Progress on the Exchange Programme with Nottingham University, U.K.
5. Improvement of E-Mail Service.
6. Preparation of Handing-over Ceremony of Grant Aid Equipment.
7. Others.

**The 9th Steering Committee, April 23, 1996**

1. Review on the Activities of Project for Japan's Fiscal Year 1995.
2. Project Implementation Programme for Japan's Fiscal Year 1996.
3. Programme for Enhancement of Network Building between and among higher Education Institutions in ASEAN Countries.
4. Others.

**The 10th Steering Committee, June 17, 1996**

1. Review on activities of the project.
2. Effect of N.U. Twinning Program to the Project.
3. Future schedule on the final formulation of Syllabus.
4. Preparation of Self Evaluation System on the Project and F.O.E.
5. Information will be give on the Result of the entrance examination Curriculum and New Administration System.
6. Others.

**The 11th Steering Committee, September 3, 1996**

1. Review on activities for the project.
2. Planning for International seminar in ASEAN countries.
3. Self-Study on FOE.
4. Supervision of Senior Project.
5. Information will be given on Installation of e-mail, Planning for the library improvement, Publication of Syllabus in English, Completion of Annual Research Report and Annual Work Plan for the next year.

**The 12th Steering Committee, December 13, 1996**

1. Review and Activity Plan of the Project for J.F.Y. 1996.
2. Progress on the Formulation of Syllabus.
3. Management of Self-Study Committee Proposed in the past 10th Steering Committee.
4. Preparation of Draft Annual Work Plan for J.F.Y. 1997.
5. Outline of a Five - Year Master Plan prepared for FOE of TU (Budget, Manpower, Equipment, etc.)
6. Others.

**The 13th Steering Committee, March 25, 1997**

1. Summary of the Progress of Activities of the Project for 1996 Japanese Fiscal Year (JFY)
2. Summary of the Implementation Programme of the Project for 1997 JFY
3. Progress of the Preparation and formulation of Syllabus
4. Staffing Plan of the Faculty of Engineering, Thammasat University for the coming 1~2 years.
5. Progress of the Discussions made so far in Self-Study Committee
6. Others

付属資料5. プロジェクト関連教官の留学状況

Details of 26 teaching staff further studying for higher degrees  
both inside and outside Thailand

Country	No. of Staff	Funding Sources					
		MUA	MOSTE	Monbush	JICA	FOE&TU	AIT-RTG
USA	15	11	4	-	-	-	-
UK	5	1	-	-	-	4	-
JAPAN	3	-	-	3	-	-	-
THAILAND	3	-	-	-	2	-	1
TOTAL	26	12	4	3	2	4	1

MVA : Ministry of University Affairs

MOSTE : Ministry of Science Technology and Environment

Monbush : 文部省

FOE&TU : Faculty of Engineering, Thammasat University

AIT : Asian Institute of Technology

RIG : Royal Thai Government





## タイ国内学会参加出張報告書

タイ・タマサート大学工学部拡充計画  
チーフアドバイザー 佐野美則 殿

タイ・タマサート大学工学部拡充計画  
長期派遣専門家(土木工学) 谷本勝利  
(埼玉大学工学部教授)

学会会議名 : 第3回国内土木工学会議

出張者 : 谷本勝利

: 岸野優子

同行C/P : Dr. Burachat Chatveera

Dr. Virote Boonyapino\*

Dr. Chavalit Chaleerktrakoon\*

Dr. Krittiya Lertpocasombut\*

Dr. Nakhorn Poovarodom\*\*

Dr. Uruya Weesakul\*\*\*

(JICAプロジェクト調整員)

(タマサート大学工学部土木工学科講師)

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(タマサート大学工学部土木工学科講師)

(タマサート大学工学部土木工学科講師)

(タマサート大学工学部土木工学科講師)

出張地 : Hat yai, Songkla

出張日程 :

1月15日(水) バンコクから空路ハジャイへ移動

1月16日(木) 会議登録、開会式、特別講演会、歓迎会出席

1月17日(金) 研究論文発表会(6分科会)参加

1月18日(土) 特別講演会出席、パネルディスカッション参加

1月19日(日) ハジャイから空路バンコクへ移動

\* 1月16日に往路移動、1月18日に復路移動

\*\* 1月15日に往路移動、1月18日に復路移動

\*\*\* 1月17日に往路移動、1月18日に復路移動

会議内容 :

本会議は、タイ工学会およびアリンソンクラ大学工学部土木工学科主催のもとに、次の2つの目的のもとに開催された。

(1) タイ全国からの土木技術者が一堂に会し、経験や意見を交換することによって、新しい技術者のための今後の工学教育の在り方についての方向を探る。

(2) 研究者が論文を発表し、コメントを得ることによって、教育および研究能力の向上を図る。

(1) については、初日にアルン チャイセリ タイ工学会長(元チュランランコン大学教授)が「工学実務における質の保証」と題した特別講演を行い、それに対する質疑応答があった。また、最終日には、ワンチャイ シリチャナ助教授(大学省恒久秘書官)が「工学研教育における質の保証」と題した特別講演を行い、それに対する質疑応答があったのち、「工学教育における質の保証」および「工学実務における質の保証」についてのパネルディスカッションが行われた。これらの議論は、近年における新しい大学の設立に伴う工学教育および卒業生の質の低下への懸念および国際化に伴う技術者の質の向上の必要性を背景としたものである。

(2) については、2日目に、6セッションに別れて、研究論文の発表とそれに対する質疑応答という形で行われた。1人の発表時間は20分で、質疑応答が5~10分とられ、議論は比較的活発であった。各会場への出席者はセッションや時間によって20~40名の範囲であった。発表論文の総数は67、発表者は60名であった。発表論文の機関別内

訳は次のとおりである（筆頭著者の所属による）、なお、会議への提出者数は230であった。

アジア工科大学	12編
タマサート大学	10編 (FOR6編、SIIT4編)
マハナコーン工科大学	10編
プリンスソクラ大学	10編
チェンマイ大学	6編
キングモンクット工科大学	5編
チュラロンコン大学	1編
カセサート大学	1編
コーンケン大学	1編
スリパトナム大学	1編
その他	10編

分野別論文の内訳は次のとおりである。

構造工学	18編
水資源および環境工学	12編
材料およびコンクリート工学	12編
地盤工学	8編
交通工学	8編
建設マネジメント	6編
一般	3編

会議の最後に、次回総会はキングモンクット工科大学が担当することが報告された。

#### 学会参加の効果

##### (1) C/Pにとっての直接的効果

タマサート大学工学部からは5名のC/Pが6編の論文を発表したが、そのうち2名は国内学術会議での初めての発表であり、国内でデヴェウを飾るという大きな効果があった。既経験者を含めて、こうした発表は、研究者としての存在を示すのに、またとない機会であるとともに、質疑応答によって得られる今後の研究への示唆も多く、さらなる研究への動機付けの効果が大きいことはいままでもない。また、1名は発表論文無しに参加したけれども、タイ国内での研究の実態に触れることができたとともに、次回での発表に大きな刺激を得た効果は大きい。

さらに、研究論文の発表や質疑応答のほかに、「工学実務および工学教育における質の保証」という、タイ国内でのホットな課題に対し、特別講演の聴講、パネルディスカッションへの参加を通じて、最新の見識に触れることができたことは、今後の教育・研究方法の改善への効果が大きいと期待される。

##### (2) プロジェクトにとっての効果

各C/Pが(1)の効果を得ること自体、本プロジェクトにとっての大きな効果であるが、さらに加えて、今回工学部から6編という多数の論文を発表できたことは、グループとしての研究能力の向上の証として、誇れることである。こうした研究発表への意欲が、他学科への刺激となり、ひいてはプロジェクト全体としての活性化につながることを期待される。

また、SIITを含めれば、タマサート大学からの発表論文は10編であり、AITまで含めれば、合計22編、実に全体の1/3をランシット地区が占めたということになる。数の多さだけがすべてではないけれども、この地区での研究活動への意欲の高さを反映していることは間違いない。そうしたランシット地区の一翼を果たしたという自覚は、土木工学科グループ全体の一層の活性化に大きな効果を与えるものと期待される。ランシット地区をアセアン諸国における土木工学のセンターオブエクセレンスにという夢が膨らむところである。

(3) 出張専門家および調整員にとっての効果

兩名にとって、今回の出張は着任後初めての経験であった。特に、調整員にとっては、学会の総会や研究発表会がどのようなものであるか初めて体験することができ、かつ研究発表というC/Pの最高の晴れ舞台を大勢の参加者とともに見ることができたことは、大学教官としてのC/Pへの理解をより深めるのに大きな効果があった。また、本プロジェクトでは、1998年3月の土木工学に関する国際セミナー開催に向けて検討を重ねているところであるが、会議の運営方法等について知見を得たことは、その組織委員会の一員として大きな効果があった。

専門家自身は、今回の出張に際して、他機関のできるだけ多くの研究者・技術者と面識を得ることを、一つの大きな目的とした。会議やその他懇親の場でのタマサート大学教官およびA I T日本人教官以外の確認できる面談者は以下のとおりであり、今後プロジェクトの仕事を進めていくうえで、大きな財産になると考えている。

タイ工学会：Arun Chaiseri会長、Assoc.Prof.Dr.Sukhum Sukapanpotharam登録官

チュラロンコン大学：Prof.Dr.Ekasit Limsuwan, Prof.Dr.Panitan Lukkunaprasit

Asst.Prof.Dr.Wanchai Teeparaksa, Dr.Boonchai Stitmannaitum

チェンマイ大学：Assoc.Prof.Dr.Chesada Kasenset

カセサート大学：Asst.Prof.Dr.Supakij Nontananandh, Asst.Prof.Dr.Korchoke

Chantawarangul

マハナコーン工科大学：Dr.Kittipong Jirayoot

プリンスソクラ大学：Dr.Udomphon Puetspaiboon, Dr.Chatchai Ratanachai,

Dr.Somboon Pornpinatfpong

アジア工科大学：Assoc.Prof.Dr.Pennung Warnitchai

スリパトム大学：Dr.Nares Pantaratorn, Dr.Wudhipong Kittitanasuan

陸軍士官学校：Lt.Pongsak Kivenang

Electric Generating Authority of Thailand: Mr.Tin Ketratanaborvorn

J.Muller International: Dr.Songkiat Matupayont

General Engineering Public Company: Mr.Mhan Sriruenthong

以上

Research Papers planned in JFY 1997

- 1) Dr.Virote Boonyapinyo:  
Fourth Asia-Pacific Symposium on Wind Engineering, July 14-16, 1997, Gold Coast, Australia  
No JICA Budget
  - 2) Dr.Virote Boonyapinyo:  
Sixth Asia-Pacific Conference on Structural Engineering and Construction,  
January 16-18, 1998, Taipei, Taiwan  
No JICA Budget
  - 3) Dr.Burachat Chatveera: Expansion of Cement Paste and Mortar Using Lignite Fly Ash,  
Third CANMET/ACI International Symposium on Advances in Concrete Technology,  
August 25-27, 1997, Auckland, New Zealand  
No JICA Budget Budget of 50,000 Baht has been approved by MUA.
  - 4) Dr.Burachat Chatveera: High Performance Concrete,  
Fourth CANMET/ACI International Conference on Durability of Concrete,  
August 17-22, 1997, Sydney, Australia  
No JICA Budget
  - 5) Dr.Burachat Chatveera: Durability of Sisal Pulp-Mortar Boards,  
5th International Conference on Structural Failure, Durability and  
Retrofitting, November 27-28, 1997, Singapore  
No JICA Budget in principle
  - 6) Dr.Burachat Chatveera: High Performance Concrete Containing Modified Rice  
Husk Ash,  
5th International Conference on Concrete Engineering and Technology, May 6-8, 1997, Kuala  
Lumpur, Malaysia  
JICA Budget
  - 7) Dr.Uruya Weesakul: Applicability of hydrodynamic model for flood forecasting in a basin with  
few hydrometric stations,  
Saint-Venant Symposium "Multiple Scale Analyses and Coupled Physical Systems", August  
28-29, 1997, Paris, France  
No JICA Budget
  - 8) Dr.Uruya Weesakul:  
IAHR-AIRH Congress "Water for a Changing Global Community", August 10-15, 1997, USA  
No JICA Budget  
☆ The application was given up due to the shortage of budget and time.
- ☆ Dr.Krittiya Letpocasombut will apply a paper to International Conference in 1998.
- ☆ Dr.Nakhorn Poovarodom: Mode localization in multispan cable systems,  
Engineering Structures, UK. Accepted.
- ☆ Dr.Nakhorn Poovarodom:  
Sixth Asia-Pacific Conference on Structural Engineering and Construction,  
January 16-18, 1998, Taipei, Taiwan
- ☆ Partial support (at least Registration fee) by JICA is requested to attend to  
International Conference which is held outside of ASEAN countries.

ATTN: Dr. Minori Sano and Prof. Kasutoshi Tanimoto

FROM: Uruya WEESAKUL

Date : 30 May 1997

Subject : Request for Partial Financial Support for Presentation Technical Paper

Attached document is my technical paper to be presented in the *SAINT-VENANT SYMPOSIUM, 'Multiple scale analyses and coupled physical systems'* which will be held in Paris on 28 - 29 August 1997, organized by Ecole Nationale des Ponts et Chaussees.

I have requested financial support for presentation of this technical paper from Faculty of Engineering. The Faculty of Engineering will fully support my presentation under the condition that the total budget should not exceed 40 000 Baht (since the Faculty of Engineering has limited budget and one lecturer can use only 40 000 Baht per year for this matter). But the estimated total expenses for presentation this paper are around 73 500 Baht as follows :

Registration Fee	15 000 Baht
Air Ticket BKK-PARIS-BKK	28 000 Baht
Airport Fee	1 000 Baht
Transportation	3 000 Baht
Accommodation 5 days	11 500 Baht
Perdium 6 days	<u>15 000 Baht</u>
Total amount	<u>73 500 Baht</u>

Therefore I would like to request partial financial support from JICA. I expect that at least the Registration Fee can be supported by JICA in order to promote the research activities in the Faculty and finally to enhance the capability in conducting research work of lecturers in the Faculty resulted in an achievement of our JICA Project.

## Progress of graduate program

### (1) International Master Degree Program in Civil Engineering, SIIT & FOE, TU

Memorandum of Understanding on Academic Cooperation between Dept. of Civil Engg., FOE, TU and Dept. of Civil Engg., IIT, TU  
signed on Oct.31, 1995

#### Objectives

- 1) to produce graduates of master degree in civil engineering
- 2) to promote research in the civil engineering field to serve as a basis of the development of innovative knowledge
- 3) to promote and develop the academic skills of the faculties in both undersigned parties.

Full-time faculty : 6 from SIIT & 8 from FOE in 1997

JICA Expert : 2 in Academic Review Committee (Prof.Fujiwara, AIT & Prof.Tanimoto, FOE)  
2 in Associated Faculty (Prof.Tanimoto, FOE & Assoc.Prof.Niwa, AIT)

GPA  $\geq$  2.75

Interview on Oct.25 and 30, 1996 for 8 applicants.

Started in November, 1996 with 4 students

Mr.Chayanon Hansapinyo (Chiang Mai Univ., GPA 3.25)	Structural Engineering
Mr.Pulpong Pongvithayapa (SIIT, GPA 2.79)	Geotechnical Engineering
Mr.Pichai (FOE, TU, GPA 2.79)	Concrete Material
Mr.Wanlapat (SIIT, GPA 2.89)	Structural Engineering

Interview on May 23, 1997, for 7 applicants

6 students passed ( one student will go to AIT)

3 from SIIT, 1 from FOE and 1 from Chiang Mai Univ.

In addition, 2 students from Saitama University with Monbusho Scholarship will study for the 1st semester in 1997.

Teaching assistant fee 18,000 Baht/month per one faculty is prepared.

Half-part teaching assistant 9,000 Baht/month  $\times$  2 students

Tuition Fee : 74,000 Baht/semester

### (2) Master Degree Program in Civil Engineering, FOE, TU

Structural Engineering Course

Water Resources and Environmental Engineering Course

Full-time Program for 2 years GPA(Target)  $\geq$  2.5  
Part-time Program for 3 years GPA(Target)  $\geq$  2.5

Two lectures in day time and two lectures in evening.

Acceptance students : about 15

Lecturers 17 from FOE

Special Lectures from SIIT : Dr.Smauk Tangtermsirikul (Structural Engineering)  
Dr.Chaisak Sripadungtham (Water Resources Engineering)  
Dr.Pruetta Nanakorn (Structural Engineering)

Special Lecturer from Chulalongkorn University :  
Dr.Tanit Tongthong (Construction Management)

Total Tuition Fee for Program : approximately 60,000 Baht

Interview on May 28, 1997 for 30 applicants selected 41 by documents in Structural  
Engineering Course  
12 applicants in Water Resources and  
Environmental Engineering Course

Accepted Students : 18

Structural Engineering Course : 12

Full-time program : 5

Part-time program : 7

GPA 2.52(SIIT), 2.38(FOE), 2.47(FOE), 2.85(FOE), 2.59(FOE), 2.60(FOE),  
2.86(Sripatum), 3.36(Ratchamongkol Inst. Tech.), 3.81(FOE), 2.57(FOE),  
2.59(Chula), 2.65(Chiang Mai)

Water Resources and Environmental Engineering Course : 6

Full-time program : 2

Part-time program : 4

GPA : 2.27 - 2.82

FOE : 3, SIIT : 1, Khon Kaen : 1, KMITL : 1

**Master Degree Programme in Civil Engineering**  
**Faculty of Engineering**  
**Thammasat University**

Objective

- For produce Engineer in Master degree
- For education promotion to lead into new technology and development technology in Civil Eng.
- For support and cooperation, to exchange knowledge and experience in study activities and research in country and international

Curriculum

Master of Civil Eng. have 2 Programs Structural Eng. and water resources and Environmental Eng. total 42 credit in the program. The structure of curriculum as follows:

Compulsory Subject	12	Credit
Elective Course	12	Credit
Thesis	18	Credit

**Structural Engineering Program**

**Compulsory Subject**

- Applied Mathematics
- Theory of Structural Mechanics
- Advanced Structural Analysis
- Advanced Reinforced Concrete Structures

**Elective Subject**

- Advanced Structural Dynamics
- Finite Element method in Civil Eng.
- Experimental Structural Analysis
- Advanced Prestressed Concrete Design
- Advanced Design and Behavior of Steel Structures
- Advanced Concrete Technology
- Project Management and Planning in Civil Eng.
- Special Topic in Civil Eng.
- Environment Impact in Civil Eng.



- Structural Stability
- Numerical Methods in Plates and Shells
- Design of Tall Bldg.
- Plastic Design of Steel Structures
- Structural Optimization

**Water Resources and Environmental Engineering Program**

**Compulsory Subject**

- Hydrodynamics
- Advance Hydrology
- Physical and Chemical Processes
- Environmental Chemistry and Laboratory

**Elective Subject**

- Project Management and Planning in Civil Engineering
- Groundwater
- Water Resource System Eng.
- Hydraulic Design
- Hydrodynamic Model
- Treatment Process Design
- Environmental Microbiology
- Biological processes
- Advanced Water and Wastewater Treatment Processes
- Hazardous Waste Management and Remediation
- Special Topic in Civil Eng.
- Environment Impacts in Civil Eng.

**Lecturer**

To comprise lecturers from Civil Eng Dept. Thammasat Univ. and Special lecturers from outside.

**Education System**

In full-time program and part-time program

First Semester	June - September
Second Semester	November - February
Summer Semester	April - May

Curriculum Period 2 years for full-time program  
Curriculum Period 3 years for part-time program

Qualification of applicants

Bachelor degree on Civil Eng. or equivalent

Acceptance Student

Apporoximately 15 students per year

Selection

By Interview and consideration from result Bachelor graduation and working experience

Place and Equipment used

Faculty of Eng. Thammasat Univ. Rangsit and Laboratory including equipment used in Faculty

Expense

Total cost per program is about 60,000 B.

Application Programme

Application sale	6-23 May'97
Take application	6-23 May'97
Examination	28 May'97
Annouce	29-May'97
Open Semester	9 June'97

Distribution

- Faculty of Engineering 4Fl. Room No. 407 Thammasat Univ. Rangsit Campus or Administration 1Fl. Room No. 109 Faculty of Liberal Arts Thammasat Univ. Thaprachan
- By Mail

化学工学科

JICA 巡回指導調査団参考資料

1997.6.4

JICA 専門家 (化学工学) 関口 秀俊

1. 1996 年度化学工学科卒論

学生：18名、指導教官：6名（常勤：2、非常勤：3、専門家：1）

中間発表会：1996年10月26日、最終発表会：1997年3月17日

List of Project Topics	Advisor / Co-advisor
Evaluation of equation of state for predicting properties of Freon-12	Mr. Prokpran(TU)
Heat effect on preparation of active carbon	Mr. Prokpran(TU)
Effect of parameters on separation of dye solids by foam separation method	Mr. Wanwisa(TU)
Characterization of activated carbons prepared from palm shell and/or durian shell and compare results with activated carbons prepared from other food waste sources; i.e., coconut shell	Ms. Wanwisa(TU)
Study of influence of parameter to filtration of glucose prepared from yam flour	Dr. Chitpong(CU)/ Mr. Prokpran(TU)
Study of hydrogen gas production from ethanol by reforming process	Dr. Apichai(KKU)
Study of appropriate conditions for preparation Pd/Mg, Cu/Al <sub>2</sub> O <sub>3</sub> catalysts	Dr. Supaporn(KKU)
Adsorption heat pump using activated carbon produced from food waste	Dr. Sekiguchi(TTF)/ Ms. Wanwisa(TU)
Reaction of volatile organic compound in a packed-bed plasma reactor	Dr. Sekiguchi(TTF)/ Ms. Wanwisa(TU)

TU: Thammasat Univ., CU: Chulalongkorn Univ., KKU: Khon Kaen Univ., TTF: Tokyo Inst. of Tech.

・課題：卒論環境（ソフト・ハード）の改善、内容の充実など

2. 1997 年度化学工学科卒論

学生：17名、指導教官：6名（常勤：2、非常勤：3、専門家：1）

3. Regional Symposium on Chemical Engineering 1997

1997年10月13~15日、マレーシア・ジョホールバル

発表予定：TUでの研究の発表（上記斜体テーマ関連）5件+α

4. 共同研究

・ Prince of Songkla University

Research and Development of Production of Activated Carbon from Palm Oil Shell

・ Khon Kean University

a. Catalytic Decomposition of Ethanol

b. Process Development for a Renewable Ethanol-based Ether Emphasis on Superacid Catalyst

c. Bio-diesel from Oils and Fats

・ 文部省科研費（国際学術研究：共同研究）

農林水産業およびそれらの関連産業からの廃棄物の有効利用

"Utilization of Residues from Agriculture, Forestry, Fishery, and Related Industries"

研究者構成：日本側（計6名） 東京工業大学 工学部：6名

タイ側（計8名） Prince of Songkla Univ. 工学部：2名、農工学部：2名

Thammasat Univ. 工学部：2名、Khon Kean Univ. 工学部：1名

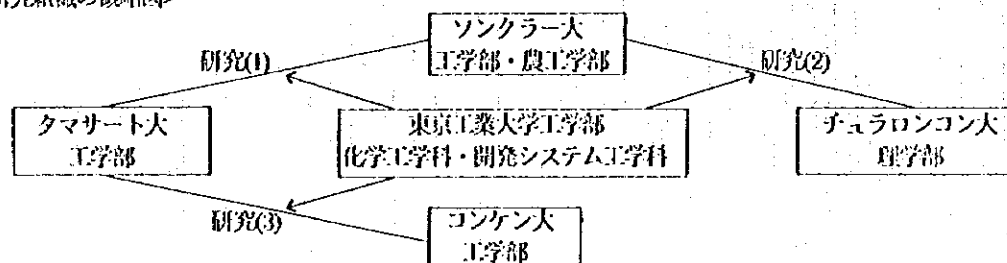
Chulalongkorn Univ. 工学部：1名

研究内容：（1）パームオイル製造工程からの固形残渣の有効利用

（2）エビの殻などの海産物加工工程からのスラッジの有効利用

（3）食品加工工場からの食品廃油の有効利用

<研究組織の概略図>



## 機械工学科 ①

### タマサート大学工学部機械工学科の教育・研究活動に関する現況報告

1997年4月23日

JICA 専門家

大里有生

#### 1. 機械工学科の概要

1995年に創設され、1997年の6月に第3学年生を迎え入れる段階にある、専任教員の人員も徐々に整備されつつあり、第3学年及び第4学年に対して必要とされる高学年生への専門教育を含め、学部教育体制全体の立ち上げを現在進めつつある。同時に、教官による研究活動への取り組みも活発化し始めており、1998年に必要とする第4学年生に対するシニア・スチューデント・プロジェクト(卒業研究)への準備も進行しつつある。また、更なる新任教官の獲得にも積極的に動いており、学年進行に即した学科全体の教育・研究体制の整備が着実に進行しつつあると判断される。

#### 2. 教官の現状と将来

##### (1) 1997年4月現在の教官の陣容

教官総数 8名

内 訳 現 員 7名

国外留学 1名

学 科 長 Mr. Kiatkhajom Suwetvetin

備 考 ①現員7名の内の1名は、当該学科の教官を担いながら修士号取得のためチュラロンコーン大学の修士課程での勉学を兼務している。

②教官の学位取得状況は以下の通りである。

博士号取得者 なし

修士号取得者 5名

学士号取得者 3名

(ただし、学士号取得者の内1名はチュラロンコーン大学で修士号取得を、1名は本年6月または7月に渡米して修士及び博士の学位取得を、1名はすでに米国内に留学中であり修士及び博士の学位取得を、それぞれ目指している。)

教官の専門領域 固体材料関連 1名

数値解析・機械設計 1名

農業機械工学 2名

熱・エネルギー関連 3名

機械工学一般 1名

##### (2) 当面の教官陣容

学士号取得の教官1名が本年6月または7月に修士及び博士号取得を目指して渡米する予定である。一方、博士号取得者を常勤教官として本年の早い時期に採用する方向で現在検討中である(九州大学で工学博士取得予定)。以上を考慮すると、本年度及び次年度は、現員教官数7名以上を確保しながら推移すると判断される。

#### 3. 教育の現状と将来

##### (1) 学生数(平成9年新学期時点)

第1学年 (他学科に分散)

第4学年 なし

第2学年 10名

第3学年 19名

(2) 学生実験室等の整備状況

基礎実験室(2学年前期) : 温度、圧力、流体、エネルギー等の基礎的計測、すでに、実験室体制の整備が完了し、1996年頃に第2学年の実験教育に使用した実績をもつ。ただし、1996年に限り、後期に実施した。

機械工学実験室Ⅰ(3学年前期) : 固体、流体、熱現象の基本的実験と分析。  
現在、実験室での教育体制を整備中である。

機械工学実験室Ⅱ(3学年後期) : 固体、流体、熱現象と機械の機構の追加実験。  
現在、実験室での教育体制を整備中である。

機械工学実験室Ⅲ(4学年前期) : 動力プラント、熱交換、自動制御、振動等。  
現在、実験室整備を準備中である。

卒業研究(4学年後期) : 教官自身による研究活動の展開と短期専門家派遣による研究指導・助言を通じて、1998年実施に向け準備中である。

4. 研究活動の現状と将来

卒業生を送り出す1999年3月までのあと2年間は、機械工学科における教育システム全体の整備と充実が現員教官の重要な責務であることから、教官自身が研究活動に積極的に取り組む余裕が余りないと推察される。しかし、高学年生の受け入れ段階に来ていることもあって、教官自身による研究活動への取り組みが重要視され始めており、徐々にではあるが研究活動も萌芽しつつある。特に、新しく当該学科に着任した新任教官(本年4月に着任した教官及び昨年来に着任した教官)らによる農業機械工学関連の研究、とりわけ、農業機械の自動制御に関する研究は、理論と実験を含め着実に進展し始めており、これらの教官への技術協力が当該学科全体の研究活動の活性化へと波及する可能性がある。

5. 学科の活動とJICAの関係

(1) 平成8年度

短期専門家として深野教授(九州大学)が着任し、流体工学に関する指導を実施した。これにより、機械工学実験室における流体工学関連実験の教育内容が整備され、流体工学科目に対する講義内容も整備された。

平成8年度には、神戸大学で農業機械工学分野の修士号を取得した教官が新たに着任し、研究活動への積極的な取り組みを開始している。また、この教官の着任に伴って、JICA側とのコミュニケーションも著しく向上することとなった。

(2) 平成9年度

本年度における長期専門家の派遣要請が機械工学科から正式になされ、現在、候補者を選定中である。高学年生の受け入れ、シニア・スチューデント・プロジェクトにおける学生指導の準備、教官の教育・研究能力の向上など当面する重要課題を前にして、当該学科は長期専門家の今年度派遣に強い期待を持っている。

また、平成9年度の短期専門家として、神戸大学農学部農業工学科の堀尾尚志教授を招聘することが決定し、農業機械工学に関する技術協力及び研究指導を実施してもらうこととなった。これら専門家による協力及び指導により、機械工学科における教育体制の整備と研究活動の活性化が図られるものと期待される。

機械工学科 ②

EVALUATION FOR THE SITUATION OF USING UNTIL NOW  
THE TECHNICAL EQUIPMENT GRANTED BY JICA

As of May, 1997

For the Industrial Engineering Department:

(1) Equipment for CNC Laboratory

	Evaluation of the situation of using until now the equipment				School year of students using it	
	good	medium	bad	Mainly using for		
				teaching		research
CNC Turning Center		medium		teaching	research	3 <sup>rd</sup> , 4 <sup>th</sup>
CNC-EDM-Wire Cutting	good			teaching	research	3 <sup>rd</sup> , 4 <sup>th</sup>
CNC Vertical Machining Center	good			teaching	research	3 <sup>rd</sup> , 4 <sup>th</sup>

(2) Equipment for CAD/CAM Laboratory  
CAD/CAM system

Computer Workstation	2	good			research		
Personal Computer	6		medium		teaching	research	3 <sup>rd</sup> , 4 <sup>th</sup>
Tape Drive	/	good				research	
CDROM Drive	/	good				research	
Plotter	/			bad		research	
Laser Printer	/	good				research	
Network Equipment	/		medium		teaching	research	3 <sup>rd</sup> , 4 <sup>th</sup>
CAD/CAM Software for Workstation	/	good				research	
CAD/CAM Software for Personal Computer	/		medium		teaching		3 <sup>rd</sup> , 4 <sup>th</sup>

(3) Equipment for Precision Laboratory

Measurement Data Processing Unit	/	good			teaching	research	3 <sup>rd</sup> , 4 <sup>th</sup>
Roundness Tester	/	good			teaching	research	3 <sup>rd</sup> , 4 <sup>th</sup>

*Digital Measuring Device* /

For the Mechanical Engineering Department

(1) Equipment for Mechanical Engineering

Eddy Current Dynamometer		medium			teaching		3 <sup>rd</sup>
Exhaust Gas Analyzer		medium			teaching		3 <sup>rd</sup>
Diesel Engine Fuel Pump Test Set		medium			teaching		3 <sup>rd</sup>
Internal Combustion Engine Test Bed	good				teaching		2 <sup>nd</sup> , 3 <sup>rd</sup>
Steam Power Plant Test Set		medium			teaching		3 <sup>rd</sup>
Gas Turbine Plant Test Set		medium			teaching		3 <sup>rd</sup>
Pneumatic and Hydraulic Automatic Control System		medium			teaching		3 <sup>rd</sup>

(2) 産業工学科

1) CNC 実験室

項目No.	機材名	数量	備考
3.1.3	CNC ターニングセンター	1	標準加工径：160 mm、最大加工長：500 mm、 主軸駆動モータ 7.5/5.5 KW、工具取付ステーション10
3.1.4	CNC ワイ放電加工機	1	トラバース長：360 x 250 x 220 mm、 ワイ速度：50~360 mm/秒
3.1.8	CNC 立型マシンセンター	1	テーブル寸法：900 x 450 mm、主軸駆動モータ 7.5/5.5 KW、 主軸端形式 40 T

2) CAD/CAM 実験室

項目No.	機材名	数量	備考
3.2	CAD/CAMシステム	1 セット	
	(ハードウェア) ・ソフトウェア	2	主メモリ：64 MB、1.44 MB フロッピーディスク駆動、 1 GB ハードディスク駆動、19"カラーモニター、キーボード及びマウス
	・パーソナルコンピュータ	6	CPU：486、50 MHz、メモリ：16 MB、 1.44 MB フロッピーディスク駆動、120 MB ハードディスク駆動、 20"カラーモニター(VGA付)、キーボード及びマウス
	・プリンター	1	A0、ペンペンシルプロットティング
	・ハードドライブ	1	150 MB カートリッジテープ駆動
	・CD Rom ドライブ	1	
	・ネットワーク用装置	1	システムネットワーク構成用、ソフトウェア付
	・レーザープリンター	1	A3
	(ソフトウェア) ・CAD/CAM ソフトウェア(ソフトウェア対応)	1	基本ソフト、3次元モデリング、リアルタイムレンダリング機構、 ドローイング、NC(旋盤、ミル)、ライブラリー、ポストプロセッサ、 有限要素法解析、インターフェイス
	・CAD/CAM ソフトウェア (パーソナルコンピュータ対応)	6	基本ソフト、ドローイング、インターフェイス、NCプログラム

3) 精密計測実験室

項目No.	機材名	数量	備考
3.3.1	データプロセッサ	1	データ入力：4チャンネル、登録部品数：32、 最大登録項目数：26/部品、9"CRT、プリンター
	デジタル計測器	1	工具顕微鏡、デジタルマイクロメータ、インジケータ、パス、 各種マイクロメータ(外側、内側、ねじ、歯車等)ハイトマスター
3.3.4	真円度測定機	1	最大測定径：280 mm、最大測定高さ：外径220 mm、 内径：100 mm、最大質量：10 Kg

表-7 機械工学科選定機材の概要

項目No	機 材 名	使用目的 (該当カリキュラム)
1	渦電流式動力計	エンジンの主性能である出力の測定に使用する。
2	排気ガス分析計	エンジンの排気ガス中に含まれる炭酸、窒素、硫黄酸化物の定量分析に使用する。
3	ディーゼル燃料噴射ポンプテスター	ディーゼルエンジン用の燃料噴射ポンプの性能に関する実験に用いる。
4	内燃機関試験装置	ディーゼルエンジンの特性・性能に関する実験に使用する。
5	スチームパワープラント実験装置	実験用の小型ボイラー、タービン、発電機のシステムによる火力発電の原理、運転、性能に関する実験に使用する。
6	ガスタービンプラント実験装置	実験用ガスタービンによる発電の原理、運転、性能に関する実験に使用する。
7	空圧・油圧式制御システム実験装置	温度、圧力、流量、液面などが変化したり、設定量を変化した時の制御特性に関する実験に使用する。



## 付属資料 7. タマサート大学概要

### 1. Name & Address

Name : Thammasat University  
Address : Tha Pra Chan Campus : 2 Phra Chan Road, Bangkok 10200  
Tel. (662) 221-6111-20 , 221-6171-80  
Telex 72432 TAMAST TH  
Fax (662) 224-8099 , 224-9423  
Rangsit Center Klong Luang District  
Pathum Thani 12121  
Tel. (662) 516-0020-39  
Fax (662) 516-0976

### 2. Background

Established by the Thammasat University Act in 1933, the university was inaugurated on June 27, 1934, as an open university with the objective of propagating the learning of Law and Politics to all. The university was then named "Thammasat Lae Karn Muang", which literally means "The University of Moral Science and Politics". By 1994 there were four major fields of study: Law, Commerce and Accountancy, Political Science and Diplomacy, and Economics. In 1952 the name was changed to Thammasat University. Two years later, the fields of Social Work and Journalism were added. The Institute of Public Administration, offering a post-graduate program, was established in 1955. It was transferred to the National Institute of Development and Administration in 1966.

Thammasat University marked a milestone in university education in Thailand by introducing liberal arts education with the founding of the Faculty of Liberal Arts in 1962. Since then, liberal arts education has spread to all universities in Thailand, offering what is called "foundation core courses" to all undergraduates. The Faculty of Liberal Arts embraced the following major disciplines: Chinese, Drama, English as a Second Language, English Language and Literature, Geography and Natural Science, German, History, Japanese, Library Science, Linguistics, Mathematics, Philosophy, Psychology, Russian, Statistics, and Thai.

In 1984, the Department of Sociology was upgraded to become the Faculty of Sociology and Anthropology, and the Department of Journalism became the Faculty of Journalism and Mass Communication.

The year 1986 saw several changes to the University. The new campus site at Rangsit was opened to new students. Currently, all first year classes are held there. The Faculty of Science and Technology was established and situated on the new campus. This was followed by the establishment of the Faculty of Engineering in 1990 and the Faculty of Medicine in 1991.

At present, there are twelve faculties at Thammasat University : Law, Commerce and Accountancy, Political Science, Economics, Journalism and Mass Communication, Liberal Arts, Science and Technology, Social Administration, Sociology and Anthropology, Engineering, Medicine, and the Graduate School.

The University also offers graduate programs leading to master's degrees in Accounting, Business Administration, Marketing, Economics, Law, History, Library Science, Mass Communication, Political Science, Social Work, Sociology, Anthropology, Thai and French Translation, Linguistics, Industrial and Organizational Psychology, Applied Statistics, and Community Development.

Besides the regular first-degree courses conducted in Thai, the University also offers international programs in English in the fields of Business Administration, Economics, and Engineering. Graduate international programs leading to master's and doctor's degrees are also available at the Faculty of Commerce and Accountancy and at the Faculty of Economics.

Thammasat has five institutes whose responsibilities are mainly research work. These are the Thai Khadi Research Institute, the Human Resources Institute, the Information Processing Institute for Education and Development, the East Asian Studies Institute, and the Language Institute

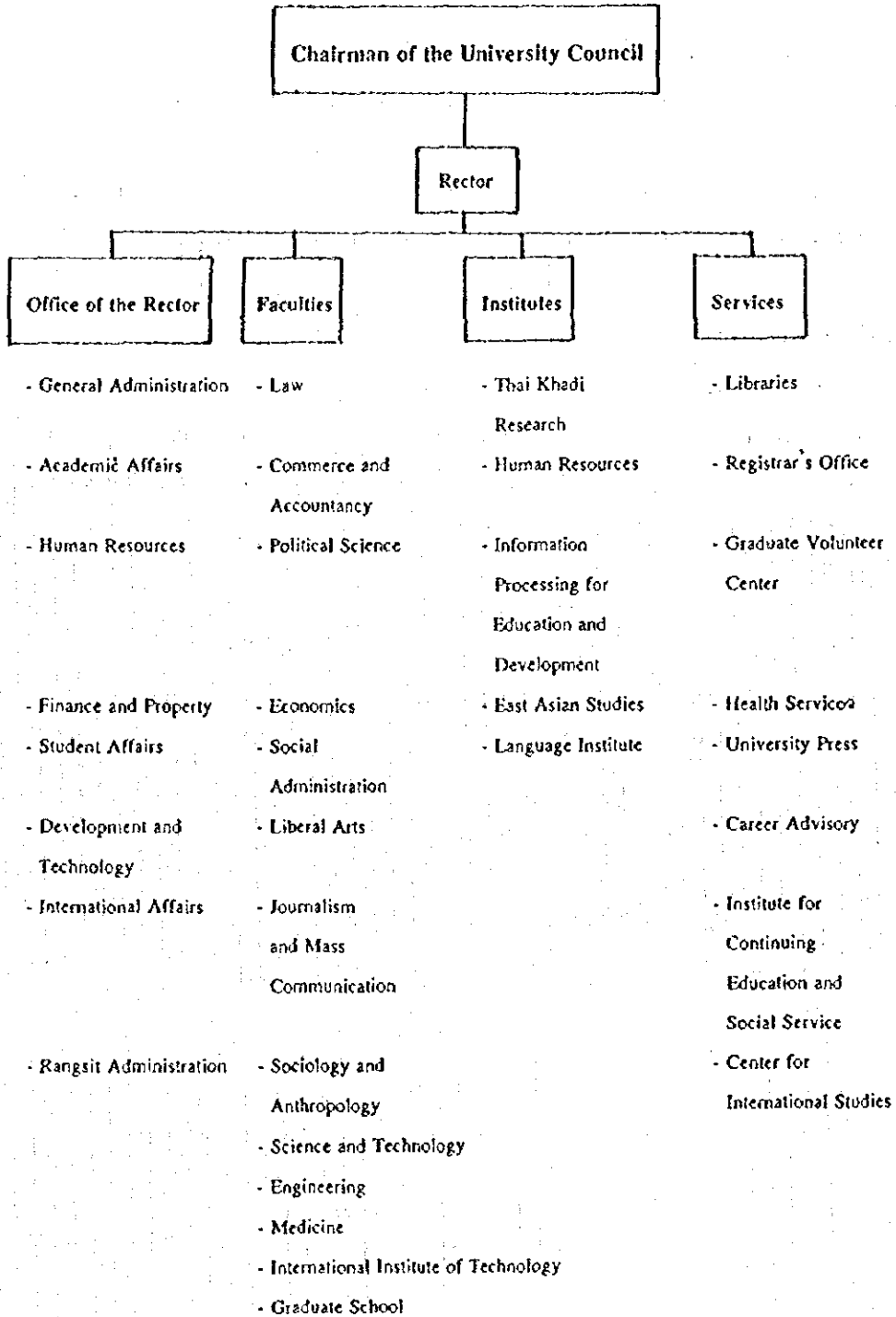
Having started out as a law school, Thammasat University has gradually expanded to offer courses in Social Sciences, Humanities, and Sciences, with the aims to provide higher education in the fields pertinent to social needs and to promote research and Thai culture.

Several University alumni have been in prominent positions contributing to the development of the nation, such as Prime Minister, Supreme Court judges, government ministers, Members of Parliament, Members of the Senate, public servants, successful businessmen, writers, social and political thinkers and workers. In fact, Thammasat University alumni have served the country in all areas, at local, national and international levels.

### **3. Organization**

The University is organized into 8 major areas: general administration, academic affairs, human resources, finance and property management, student affairs, university development and technology, international affairs, and Rangsit administration. The Vice-Rectors heading these divisions report directly to the Rector.

## ORGANIZATIONAL STRUCTURE :



## 4. Academic Program

### 4.1 Program of Study (conducted in Thai)

#### 1. Faculty of Commerce and Accountancy:

- Bachelor's Degree Programs: Accounting, Business Administration  
Finance and Banking, Human  
Resources and Organization.  
Industrial Management, International  
Transport, Management Information  
Systems  
Marketing

- Graduate Diploma Program : Auditing
- Master's Degree Programs : Accounting, Business Administration,  
The Executive MBA Program,  
Marketing
- Doctoral Degree Program : Joint Doctoral Program in Business  
Administration

#### 2. Faculty of Economics:

- Bachelor's Degree Program: Economics
- Master's Degree Program: Economics

#### 3. Faculty of Engineering:

- Bachelor's Degree Programs: Chemical Engineering, Civil  
Engineering, Industrial Engineering,  
Mechanical Engineering

#### 4. Faculty of Journalism and Mass Communication:

- Bachelor's Degree Programs: Advertising and Public Relations,  
Broadcasting (Radio & Television),  
Cinematography and Photography,  
Communication, Newspaper &  
Publications
- Master's Degree Programs: Communication Policy and Planning,  
Development  
Mass Communication,  
Communication Research

**5. Faculty of Law:**

- Bachelor's Degree Program: Law
- Graduate Diploma Program: Business Law
- Master's Degree Programs: Business Law, Criminal Law, International Law, Private Law, Public Law

**6. Faculty of Liberal Arts:**

- Bachelor's Degree Programs: Chinese, Drama, English, English Language and Literature, French, Geography, German, History, Japanese, Library and Information Science, Linguistics, Philosophy and Religion, Psychology, Russian, Thai
- Graduate Diploma Program: Thai and English Translation
- Master's Degree Programs: History, Industrial Psychology, Library and Information Science, Linguistics, Thai and French Translation

**7. Faculty of Medicine:**

- Bachelor's Degree Program: Medicine

**8. Faculty of Political Science :**

- Bachelor's Degree Programs: Government, International Relations, Public Administration
- Master's Degree Programs: Government, International Relations and Diplomacy, Public Administration
- Special Master's Degree Programs: Executive Public Administration, Government for Executives

**9. Faculty of Science and Technology:**

- Bachelor's Degree Programs: Agriculture Technology,  
Biotechnology, Chemistry, Computer  
Science, Environmental Science,  
Food Science, Health Science,  
Mathematics, Physics,  
Rural Technology, Applied Statistics
- Master's Degree Program: Applied Statistics

**10. Faculty of Social Administration:**

- Bachelor's Degree Program: Social Work
- Master's Degree Programs: Community Development, Geriatric  
Social Work, Labour Welfare,  
Medical Social Work, Social Work  
in Criminal Justice, Social Work in  
Education

**11. Faculty of Sociology and Anthropology:**

- Bachelor's Degree Program: Sociology and Anthropology
- Master's Degree Programs: Sociology, Anthropology

**4.2. International Program of Study (conducted in English)**

**1. Faculty of Commerce and Accountancy:**

- Bachelor's Degree Program: Business Administration
- Master's Degree Program: Marketing

**2. Faculty of Economics:**

- Bachelor's Degree Program: Economics
- Master's Degree Program: Economics
- Doctoral Degree Program: Economics

### 3. International Institute of Technology:

- Bachelor's Degree Programs: Civil Engineering, Electrical Engineering, Industrial Engineering, Chemical Engineering, Mechanical Engineering

## **5. University Council**

The Ministry of University Affairs has the overall responsibility for the organization and administration of all the universities in the Kingdom. However, each university has its own University Council, directly responsible for policy formulation and administration of the university.

The Thammasat University Council, chaired by Professor Khunying Nongyao Chaiseri, is composed of nine to fourteen honorary members selected from various professions, both public and private; nine members selected from Vice-Rectors, Deans, and Directors, the President of the Faculty Senate; six representatives of the university faculty members; and two representatives chosen from the non-academic staff. The Rector is an exofficio member of the Council and acts as the executive head of the university.

## **Administrative Officers**

### 1. Rector

Assoc. Prof. Noranit Setabutr  
Tel. 224-8105, 221-6111 Ext.1111

### 2. Vice-Rector for General Administration

Dr. Udom Rathamarit  
Tel. 224-9433

### 3. Vice-Rector for Academic Affairs

Asst. Prof. Dr. Anek Laothamatas  
Tel. 222-8872



**4. Vice-Rector for Finance and Property Management**

Asst. Prof. Jaruporn Viyanant

Tel. 222-0847

**5. Vice-Rector for Personnel Administration**

Assoc. Prof. Dr. Chintana Damronglerd

Tel. 223-3756

**6. Vice-Rector for Planning and Development**

Assoc. Prof. Gasinee Witoonchart

Tel. 222-5602

**7. Vice-Rector for Student Affairs**

Assoc. Prof. Kundhol Srisembhok

Tel. 222-8871

**8. Vice-Rector for International Affairs**

Dr. Kajit Jittasevi

Tel. 224-8109

**9. Vice-Rector for General Administration at Rangsit Center**

Assoc. Prof. Dr. Twekiat Menakanist

Tel. 516-0976

**10. Vice-Rector for Academic Affairs at Rangsit Center**

Asst. Prof. Dr. Boonhong Chongkid



付属資料 8. タイ国の大学における工学部の現況

Outline of Faculty of Engineering in Thai Universities, 1995

1) Public Universities and Institutions

- IE : Industrial Engineering Department (including Computer and Engineering Management, Industrial Technology, etc.)
- ME : Mechanical Engineering Department
- EE : Electrical Engineering Department (including Electronics, Telecommunication Engineering, etc.)
- CH : Chemical Engineering
- CI : Civil Engineering Department
- CE : Computer Engineering Department
- AE : Agricultural Engineering Department
- EV : Environmental Engineering Department

NAME	UNDERGRADUATE							MASTER/DOCTOR								
	IE	ME	EE	CH	CI	CE	AE	EV	IE	ME	EE	CH	CI	CE	AE	EV
1) Burapha Univ.	○		○	○	○	○	○	○	○	○	○	○	○	○	○	○
2) Chiang Mai Univ.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
3) Chulalongkorn Univ.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
4) Kasetsart Univ.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
5) Khon Kaen Univ.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
6) KMUTT, Ladkrabang	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
7) KMUTT, North Bangkok	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
8) KMUTT, Thonburi	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9. Maejo Institute of Agri. Technology																
10) Mahasarakham Univ.																
11) Mahidol Univ.																
12) Naresuan Univ.																
13. National Institute of Develop. Administ.																
14) Prince of Songkla Univ.																
15) Ramkhamhaeng Univ.																
16) Silpakorn Univ.																
17) Srinakharinwirot Univ.																
18) Sukhothai Thammathirat Open Univ.																
19) Suranaree Univ. of Tech.																
20) Thammasat Univ.																
21) Ubon Ratchathani Univ.																
No. of Undergraduate Course	13	12	14	9	13	8	4	3								
No. of Master Course									3	8	9	5	8	1	2	3
No. of Doctor Course									0	2	2	2	1	0	0	1

(Source: Thai Higher Education in Brief, 1995)

Note:

1. Other than Departments listed above, such Departments as Naval Architecture and Marine Engineering, Petroleum Engineering, Survey Engineering, Mining Engineering, Irrigation Engineering, Water Resources Engineering, Instrumentation and Control System Engineering, Metallurgical Engineering, Tools and Machinery Engineering, etc. are also available in some Faculty of Engineering in Thai Universities.
2. As of 1995, "Faculty of Engineering" was established in 15 Public Universities and Institutions among those of total 21 and in 16 Private Universities and Institutions among those of total 28, respectively.

2) Private Universities and Institutions

IE : Industrial Engineering Department (including Computer and Engineering Management, Industrial Technology, etc.)

ME : Mechanical Engineering Department

EE : Electrical Engineering Department (including Electronics, Telecommunication Engineering, etc.)

CH : Chemical Engineering

CI : Civil Engineering Department

CE : Computer Engineering Department

AE : Agricultural Engineering Department

EV : Environmental Engineering Department

NAME	UNDERGRADUATE						MASTER/DOCTOR									
	IE	ME	EE	CH	CI	CE	AE	EV	IE	ME	EE	CH	CI	CE	AE	EV
1. Assumption Univ. (ABAC)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Bangkok Univ.			0	0	0	0	0	0	0	0	0	0	0	0	0	0
3. Bundit Sakonakhon College			0	0	0	0	0	0	0	0	0	0	0	0	0	0
4. Christian College			0	0	0	0	0	0	0	0	0	0	0	0	0	0
5. Dhurakijpunthi Univ.	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0
6. Hunchiew Chalermprabriet Univ.			0	0	0	0	0	0	0	0	0	0	0	0	0	0
7. Krirk Univ.			0	0	0	0	0	0	0	0	0	0	0	0	0	0
8. Kasem Bundit Univ.			0	0	0	0	0	0	0	0	0	0	0	0	0	0
9. Mahanakorn Univ. of Technology			0	0	0	0	0	0	0	0	0	0	0	0	0	0
10. Mission College			0	0	0	0	0	0	0	0	0	0	0	0	0	0
11. North-Eastern College			0	0	0	0	0	0	0	0	0	0	0	0	0	0
12. Payap Univ.			0	0	0	0	0	0	0	0	0	0	0	0	0	0
13. Phakklang College			0	0	0	0	0	0	0	0	0	0	0	0	0	0
14. Rajapark College			0	0	0	0	0	0	0	0	0	0	0	0	0	0
15. Rangsit Univ.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16. Technology Ratchatham College	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17. Soengtham College			0	0	0	0	0	0	0	0	0	0	0	0	0	0
18. Saint John's College			0	0	0	0	0	0	0	0	0	0	0	0	0	0
19. Saint Louis Nursing College			0	0	0	0	0	0	0	0	0	0	0	0	0	0
20. Siam Punthit College			0	0	0	0	0	0	0	0	0	0	0	0	0	0
21. Siam Univ.			0	0	0	0	0	0	0	0	0	0	0	0	0	0
22. South-East Asia Univ.			0	0	0	0	0	0	0	0	0	0	0	0	0	0
23. Sinpetum Univ.			0	0	0	0	0	0	0	0	0	0	0	0	0	0
24. Srisophon College			0	0	0	0	0	0	0	0	0	0	0	0	0	0
25. Thongsook College			0	0	0	0	0	0	0	0	0	0	0	0	0	0
26. Univ. of The Thai Chamber of Commerce			0	0	0	0	0	0	0	0	0	0	0	0	0	0
27. Vongchavalitkul Univ.	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0
28. Yonok College			0	0	0	0	0	0	0	0	0	0	0	0	0	0
No. of Undergraduate Course	7	9	16	2	9	4	0	0								
No. of Master Course									3	0	1	0	1	3	0	0
No. of Doctor Course									1	0	0	0	0	1	0	0

(Source : Thai Higher Education in Brief, 1995)

Note :

1. Other than Departments listed above, such Departments as Naval Architecture and Marine Engineering, Petroleum Engineering, Survey Engineering, Mining Engineering, Irrigation Engineering, Water Resource Engineering, Instrumentation and Control System Engineering, Metallurgical Engineering, Tools and Machinery Engineering, etc. are also available in some Faculty of Engineering in Thai Universities.

2. As of 1995, "Faculty of Engineering" was established in 15 Public Universities and Institutions among those of total 21 and in 16 Private Universities and Institutions among those of total 25, respectively.

付属資料9. タイ国の大学教育 (分野別卒業生数)

University Graduates by Subject

1993 Academic Year (June 1993 - May 1994)	Below Bachelor Degree	Bachelor Degree	Higher than Bachelor Degree	Total Graduates
<b>A. Public Universities</b>				
Education and teacher training	364	6,634	1,955	8,953
Humanities and religious studies	-	2,864	120	2,984
Fine arts	16	527	15	558
Law	26	4,778	137	4,941
Social and behavioral science	5	7,736	1,920	9,661
Business Administration	216	11,677	1,260	13,153
Public relations and communications	7	1,510	141	1,658
Home economics	-	316	9	325
Natural sciences	14	1,995	278	2,287
Mathematics and computer sciences	-	1,308	205	1,513
Medicine and health	903	6,309	1,234	8,446
Engineering	794	4,165	215	5,174
Architecture	3	211	66	280
Agriculture, forestry, and fishing	42	3,283	253	3,578
<b>Total Public University Graduates</b>	<b>2,390</b>	<b>53,313</b>	<b>7,808</b>	<b>63,511</b>
<b>B. Private Universities</b>				
Social sciences, arts, humanities	7	2,062	129	2,198
Fine arts	-	247	7	254
Law	-	829	6	835
Business administration	43	15,383	710	16,136
Public relations and communications	10	1,916	99	2,025
Natural sciences	-	352	65	417
Medicine and health	-	524	-	524
Engineering	2,411	2,415	-	4,826
Agriculture, forestry, and fishing	-	164	-	164
<b>Total Private University Graduates</b>	<b>2,471</b>	<b>23,892</b>	<b>1,016</b>	<b>27,379</b>

Source: Board of Investment

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