



**AUN/SEED-Net** **jica**

# Annual Report 2003

ASEAN University Network / Southeast Asia  
Engineering Education Development Network



### AUN/SEED-Net at a glance

Establishment of AUN/SEED-Net Project .....	23 April 2001
Duration of Project .....	5 years (Mar 2003- Mar 2008)
Number of Member Institutions in ASEAN .....	19 universities in 10 countries
Number of Japanese Supporting Universities .....	11 universities in Japan
Source of Funds .....	Government of Japan through JICA and ASEAN Foundation
Number of scholarships awarded (as of June 2004): Total .....	189 (since 2001)
. Master's Degree Program .....	143 (since 2001)
. Ph.D. Program in Japan .....	16 (since 2002)
. Ph.D. Sandwich Program .....	16 (since 2003)
Number of Master's graduates .....	14
Total annual funding from Japanese government .....	approximately 3 million US dollars
JICA Team for AUN/SEED-Net: Chief Advisor .....	Prof. Dr. Kazuo TSUTSUMI
AUN/SEED-Net Secretariat: Executive Director .....	Prof. Dr. Panitan Lukkunaprasit

## Message from Resident Representative, JICA Thailand Office

On behalf of the JICA Thailand Office, it is my great pleasure to issue the Annual Report of AUN/SEED-Net Project 2003. First of all, I would like to convey my sincere gratitude for the smooth progress of each activity since making a full-scale start on this project in March 2003. Thanks to the efforts of all the persons concerned, this project has now taken off successfully.

In JFY 2003, we strengthened and expanded our activities based on “the field-wise supporting program,” which was established in the preparatory period. As a result, we implemented 51 Master’s Degree scholarships, 6 Doctor’s Degree scholarships, 31 Collaborative Research Programs, and 14 Field-Wise Seminars, which contributed to the collaboration base among ASEAN countries and Japan. It is noteworthy not only that we achieved such numbers, but also that we surely established the roadmap to put our project on the right track.

The AUN/SEED-Net project is one of the largest regional projects for JICA, which covers the 10 ASEAN countries and 19 Member Institutions. It might be a big challenge for us to grow such a big tree, but if we promote the expansion of each activity in this way, I believe we will enjoy fruitful SEEDs among as many members as possible. When each Member Institution recognizes the significance of the SEEDs, the Network for collaboration in ASEAN and Japan will be strengthened in the real sense. JICA will continue to provide support for promoting the regional

relationship as well as the bilateral one.

At the same time, I welcome the discussion on the sustainability of our activities among ASEAN countries since the Steering Committee Meeting in 2003. Although the duration of this JICA project is until March 2008, it is necessary to make the best of this network for developing the engineering capacity in each country. In that sense, I appreciate that ASEAN ownership will maintain the motivation to make relationships in each core field and to consider the concrete measures to sustain the network. I hope we keep up the discussion, including related actors in each country, and formulate a new partnership for managing AUN/SEED-Net in the long run.

Lastly, I would like to express my sincere appreciation to all persons concerned for supporting and cooperating on this project. I trust that they will keep working with each other for the success of the project.



Mikiharu Sato  
Resident Representative  
JICA Thailand Office





**Message from AUN/SEED-Net Chief Advisor**

Sadako OGATA, new President of the JICA, emphasized result-oriented approach, enhanced efficiency, transparency, accountability and so on for the new JICA performances in her message. The AUN/SEED-Net Project will also be assessed from these points of view.

Meetings between the JICA and each member country are essential in order to facilitate bilateral arrangements. As of the end of October 2004, the Minutes have been signed with the concerned authorities of the Philippines, Laos, Indonesia, Vietnam and Cambodia.

Three and a half years have passed including two years so-called preparatory stage since the Inauguration Ceremony of the AUN/SEED-Net Project in April 2001 and the Project officially started as a 5-year project in March 2003 after the signing of the Record of Discussions by the authority of the Thai Government and JICA. I was appointed as a Chief Advisor on the occasion of the 5th Steering Committee Meeting and Year 2003 Annual Meeting in Bangkok in August 2003 and intend to do the best to fulfill my responsibility.

During this preparatory stage, a number of Thai as well as Japanese staff in the Project have embarked on the establishment and success of the Project, and also the university staff as well as students in all member institutions have contributed to the Project. Thanks to their great efforts, all activities of the Project have been taken shape and started to run smoothly. I would like to express my sincere gratitude to all of them.

Year 2003 was an epoch-making year for the JICA. JICA, established in 1974 as a “special public institution” of the Government, was turned into an “independent administrative institution” on October 1st, 2003 as a result of Japan’s administrative reform plan. Mrs.

Since the concept of “host institution” was introduced in 2003, the number of applicants for Master’s Degree Program increased rapidly and a considerable number of AUN/SEED-Net students are now studying in each host institution. Since last year, the AUN/SEED-Net Project has officially implemented Doctoral Degree Sandwich Program based on the discussion on the occasion of the Workshop in Japan in December 2002. Since this new program attracted much interest in young faculty staff and fresh graduates as well, the number of applicants also increased. The Project is, therefore, now aiming to develop human resources with Doctoral Degree in engineering field as well as to strengthen graduate courses in Member Institutions.

In the year 2003, the Project asked each host institution to establish collaborative research umbrellas in such a way that AUN/SEED-Net students, host institution staff, member institution staff as well as JSUC staff are involved in the collaborative research, aiming that the students can complete their degree programs within expected period by conducting the research works of international standard.

Although the Project is of multilateral type, the Minutes of

Although full-scale operation of the Project is now on-going after implementation of a number of programs, other components are also requested, to which the Project is always ready to listen. However, the principle objectives of the first phase of the Project are to develop human resources with higher degree as well as to establish academic network in ASEAN countries. If these objectives are accomplished in a sense that the outcomes would have a great impact in ASEAN regions and be sustainable, the second phase of the Project will probably be realized.

As the Project has not yet matured, I would like to ask all of you for your kind and continuous cooperation.

Prof. Dr. Kazuo TSUTSUMI  
Chief Advisor  
JICA Project Office for  
AUN/SEED-Net Project



## Message from AUN/SEED-Net Executive Director

It is delighted to know that, after dedicated efforts by advisors and teaching staff, the first fruits of our SEED have been produced, with 14 graduates from CU, KMITL, NTU, NUS, and UP. Most of them have resumed teaching in their respective countries. This marks an important milestone in the engineering education in ASEAN.

In Year 2003, a total of 81 students from 7 ASEAN countries studied for their Master's degrees in 10 Host Institutions, 6 students were awarded scholarships for the Ph.D. Sandwich Program, and 7 for the Ph.D. Program in Japan.

This year, the numbers are expected to increase to 143 Master's students, 16 Ph.D. Sandwich Program students, and 16 students under the Ph.D. Program in Japan. It is gratifying that the increase in enrollment is attributed to the great efforts of all Member Institutions in promoting the Project and sending good students to the Host Institutions.

The Network, with 9 emerging Regional Hubs in main Engineering disciplines, is steadily gaining momentum in full-scale operation. The research umbrellas under the Collaborative Research Program have been set up for all fields, and 31 Collaborative Research Projects were awarded last year. The Japanese Supporting

University Consortium (JSUC), playing an important role in strengthening the Regional Hubs, contributed to 65 dispatches of Japanese professors to participate in Collaborative Research Projects and Field-wise Seminars. Furthermore, 19 faculty members were granted short-term visit supports to interact with their Japanese counterparts. Three Regional Conferences/Workshops were also organized with funding from ASEAN Foundation.


Just one year ago, some doubt was cast concerning success of the Project. Today, after the concerted efforts of all parties concerned, all indicators of success have given us some glittering hope. The Project Strategy, formulated by the Japanese experts and the Steering Committee in 2002, portrays partnership of all 19 Member Institutions and 11 Japanese Supporting Universities with all academic activities harnessing the power of human networking. Co-operation in promoting the Project has led to increasing number of Master's applicants from 129 in 2003 to 166 this year. Member Institutions have also seriously cooperated in quality assurance schemes.

In fact, a friendly network has evolved, and I have evidences to support this claim. To cite a few examples, professors from ITB and UM are collaborating in Manufacturing Engineering. Professors from NTU have visited Member Institutions in the Philippines and Vietnam to establish joint programs. Collaboration between scholars from HUT and NUS in the field of High-Tc Superconducting Thin Film has produced impressive

outcome, and it is on-going. CU and NUS have initiated collaboration in external examination of a doctoral student as part of the Quality Assurance scheme.

The AUN/SEED-Net Project has stimulated and enhanced internationalization of graduate programs and opened a new page in the history of engineering education in the Host Institutions, with far-reaching impact. With the assistance of JSUC, the Network provides a new corridor to graduate degree studies for ASEAN students, which signifies self-reliance in human resource development and enlarging of human network through foreign alumni and local graduates. The strength of the Network could make AUN/SEED-Net a body for handling important matters, such as accreditation of engineering education in ASEAN. However, strength can only be derived from quality in education, and the future of AUN/SEED-Net relies heavily on the great efforts of all scholars in upgrading Engineering education in their universities to an international standard.

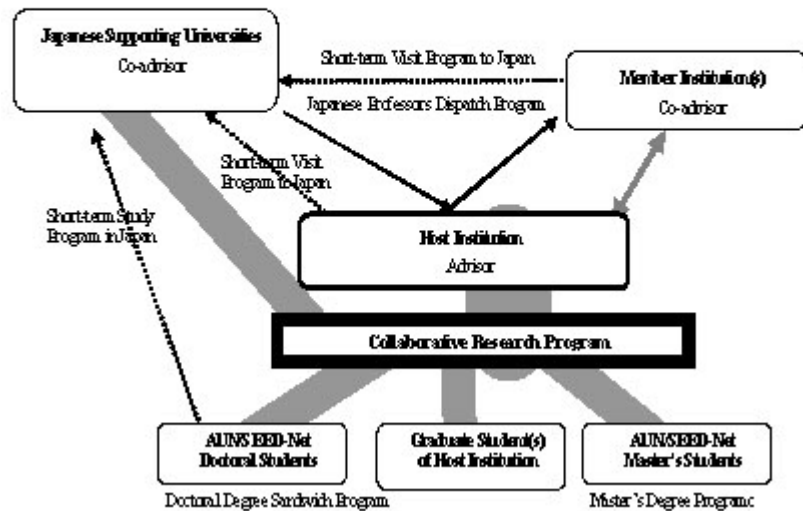
On behalf of Member Institutions, I would like to take this opportunity to express our sincere gratitude to the continued support of JICA, JSUC, ASEAN Foundation, ASEAN Secretariat, and AUN, as well as concerning authorities of the Governments of Japan and ASEAN countries.

  
Prof. Dr. Fadhiah Lukmaniasih  
Executive Director  
AUN/SEED-Net Secretariat

## I. Project Strategy

After a series of workshops and seminars, and initial implementation of the Project in the first two years of preparatory phase (2001-2002), the AUN/SEED-Net Secretariat, with active input from the AUN/SEED-Net Steering Committee, have consolidated the Project Strategy for the AUN/SEED-Net Project.

To realize the goal of sustainable development for the region, a consortium of graduate schools of engineering has been established to produce the human resources needed for Member Institutions by utilizing leading human resources from Member Institutions and Japanese Supporting Universities. Nine engineering fields have been identified, and one Member Institution has been assigned to host one field, which will act as the “regional hub” of the field. The Host Institution is responsible for training young graduates and teaching staff from other Member Institutions to acquire master’s degrees, and doctoral degrees in a Sandwich Program with the assistance of Japanese Supporting Universities in “joint thesis research supervision” of AUN/SEED-Net students to upgrade the quality of thesis research, which



will be conducted through a “Collaborative Research Program”.

The resulting eight Host Institutions from Indonesia, Malaysia, the Philippines, and Thailand, their hosting fields and the Field Coordinating Universities are listed in the table below.

In addition, the two Singaporean Member Institutions, namely NTU and NUS, may host every engineering field.

### Activity Programs

The activity programs of AUN/SEED-Net were finally categorized into 2 kinds, namely Graduate Programs (Core Programs) and Support Programs, in June 2003 according to the concept of field-wise support system. The Graduate Programs

students in Master’s Degree Programs, Ph.D. Sandwich Programs, and Ph.D. Programs in Japan. The key support program is the Collaborative Research Program under which AUN/SEED-Net students’ research is jointly supervised. Other support programs such as the Japanese Professors Dispatch, the Short-term Study and the Short-term Visit Programs are devised to allow visits of Japanese professors to Member Institutions, and visits of students and advisors to Japan, in order to strengthen academic and research capabilities. On the other hand, the Field-wise Seminar Program will facilitate gathering of all experts concerned to discuss the Project and systematize collaborative research activities among Member Institutions, and the Promotional Trip Program will help recruit excellent students to host programs. The relationships of graduate degree and key support programs are depicted above.

It is expected that, with the full scale implementation of the Project, the number of scholarships provided annually will be 55 for Master’s Degree Program, 18 for Ph.D. Sandwich Program, and 9 for Ph.D. Program in Japan.

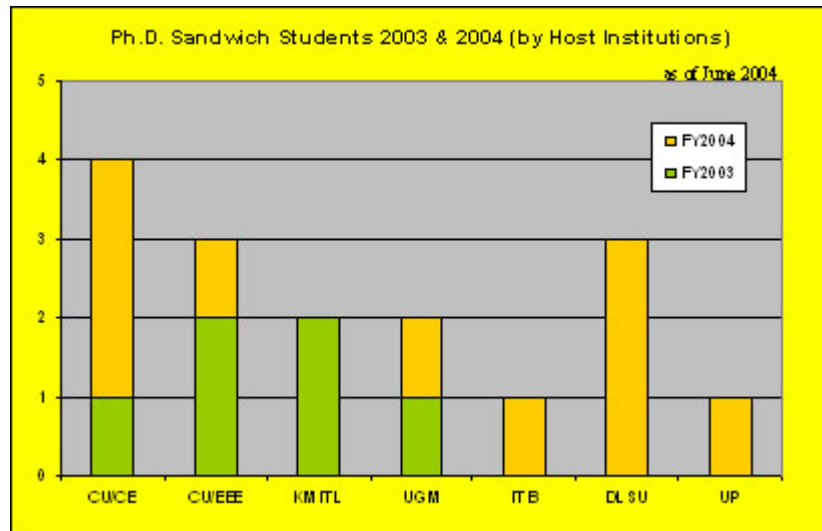
Host Field	Host Institution	Field Coordinating University
Chemical Engineering (ChE)	DLSU	Tokyo Institute of Technology
Environmental Engineering (EEE)	UP	Tokyo Institute of Technology
Manufacturing Engineering (Mamu)	UM	Keio University
Materials Engineering (Mat)	USM	Toyohashi University of Technology
Civil Engineering (CE)	CU	Hokkaido University
Electrical & Electronics Engineering (EEE)	CU	Tokyo Institute of Technology
Information & Communication Technology (ICT)	KMITL	Tokai University
Mechanical & Aeronautical Engineering (ME)	ITB(INA)	Toyohashi University of Technology
Geological Engineering (Geo)	UGM	Kyushu University



**-- Ph.D. Sandwich Program --**

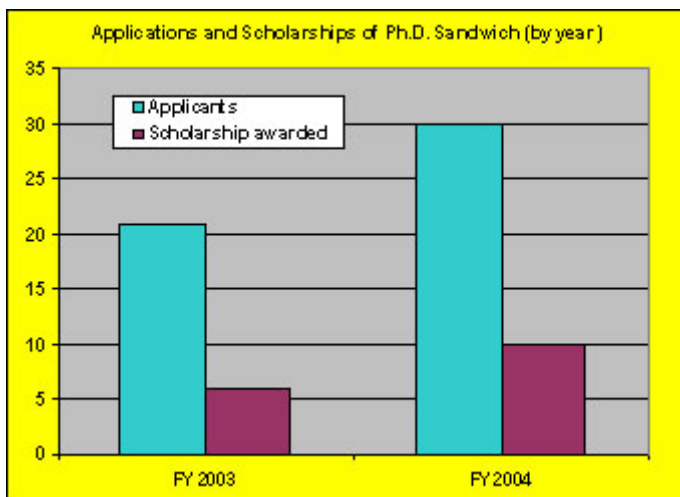
The Doctoral Degree Program within Member Institutions, so-called the Ph.D. Sandwich Program, was first implemented in this fiscal year 2003. Students under this program can enjoy a privilege of co-supervision by faculty staff from their Host Institutions and Japanese universities under JSUC, as well as a privilege to make a study trip to Japan for up to one year during their total three-year scholarship period.

Although the program opens for all applicants from members, priority is given to AUN/SEED-Net Master's graduates. For this first year 2003, out of 21 applications, only six of them were awarded. Two of the scholarship recipients who are AUN/SEED-Net Master's graduates have been awarded to further their studies in the field of Information & Communication Technology at KMITL, another two in Electrical & Electronics Engineering at CU, and one each in the fields of Civil Engineering at CU and Geological Engineering at UGM. The small number of scholarships allocated was due to the improper qualifications of applicants as well as difficulties in matching interest of supervisor and co-supervisor



from the Host and Japanese universities.

The program, however, attracted more qualified applicants in the following year. Announced in November 2003, the Ph.D. Sandwich Program 2004 received 30 applications from 8 institutions. As of June 2004, 10 applicants have been awarded scholarships: 3 each to study in the fields of Civil Engineering at CU and Chemical Engineering at DLSU, and one each to study in Electronics & Electrical Engineering at CU, Geological Engineering at UGM, Mechanical Engineering at ITB, and Environmental Engineering at UP. The number of scholarships awarded in year 2003 and 2004 were shown in the charts above (by Host Institution) and below (by year). Details of the scholarships are shown in Appendix 1.



**Short Message from Su Su Kyi  
AUN/SEED-Net Ph.D. Sandwich  
Student**



Su Su Kyi, a demonstrator from UY, is the only Ph.D. student at UGM in the year 2003. Her research focuses on landslide.

*"Rain-induced landslide is one of the most common type of natural disaster frequently occurred in Myanmar as well as other ASEAN countries. My research is to set up a system of landslide warnings to inform the community for better awareness and emergency services. Doing research work in Indonesia greatly supports mitigation of such problem, and I believe the outcome will be beneficial to many ASEAN countries."* She explained.

As this is her first time going abroad out of Myanmar, many things are waiting for her to learn, *"When I first arrived Yogya, it took me a long time to adapt to the hot weather and food. The atmosphere in the campus is also different from Myanmar. I am glad to see that the faculties at UGM are situated in the same compound, which apparently gives a sense of unity."* She also added, *"To me, the most impressive thing in Yogya is that there is almost no liquor bar or shop. Apart from the religion, I think the culture of both countries are not so much different."*

**-- Ph.D. Program in Japan --**

The Doctoral Degree Program in Japan was officially announced to Member Institutions for the first time at the end of March 2003. The AUN/SEED-Net received in total 30 applications and awarded scholarships to 4 successful candidates from Thailand, Laos, and Indonesia.

Learning from the past experiences that the procedures of application, as well as the arrangement for the successful candidates to go to study in Japan, are extremely time-consuming compared to other programs, AUN/SEED-Net decided to announce the Program for the Japanese Fiscal Year 2004 in October 2003. Out of 37 applications, the Project was successful to fully utilize the 9 scholarships targetted for the Doctoral Degree Program in Japan 2004, as shown above.

The details of awards of scholarships for the Doctoral Degree Program in Japan for the Japanese Fiscal Year 2003 and 2004 are summarized in APPENDIX 2.

**-- Collaborative Research Program --**

Aiming at the international standard of quality of thesis research output by AUN/SEED-Net students, the Project has designed the Collaborative Research Program in order to provide vital assistance from Japanese Supporting Universities in joint thesis research supervision with the advisors at the Host Institutions for AUN/SEED-Net students. After the announcement of the Program in July 2003, the Project granted the support to 31 Collaborative Research Projects with the total amount of about 220,000 USD.

Realizing the need to carry out research as early as possible in each fiscal year to efficiently utilize the funding, the Secretariat announced the Collaborative Research Program for the Japanese Fiscal Year 2004 at the last quarter of the Japanese Fiscal Year 2003 (in January 2004). As of May 2004, the Project has granted support for 35 Collaborative Research Projects in which 38 Master's and 6 Doctoral Sandwich students are involved.

The details of the Collaborative Research Projects are given in APPENDIX 3.

No.	Sending	Field	Japanese University	Expected Commencement
1	CU	EEE	Tokyo	Oct 04
2	HCMUT	CE	Hokkaido	Oct 04
3	HCMUT	Geo	Kyushu	Oct 04
4	HUT	EEE	Tokyo	Oct 04
5	KMITL	ICT	TIT	Oct 04
6	UGM	Env	TIT	Oct 04
7	UGM	ME	TIT	Oct 04
8	UM	Manu	Toyohashi	Mar 05
9	USM	Mat	Toyohashi	Dec 04

*Scholarships awarded under the Ph.D. Program in Japan, as of June 2004*

**-- Special Equipment for Collaborative Research --**

The AUN/SEED-Net Project, under the Special Equipment for Collaborative Research Program 2003, also granted support for special equipment for the Collaborative Research Projects upon requests from the respective Principal Investigators. A total amount of about 132,000 USD was granted in the past year (as of May 2004).

The detail of provision of the special equipment is listed in the table below.

Field	HI	Collaborative Research Project Title	Amount of Support (USD)
CE	CU	Innovation in Design and Construction of Infrastructures in Bangkok Subsoils	24,824
ChE	DLSU	Catalytic Processes for the Production of SynGas from Natural Gas	33,895
EEE	CU	Development of Infrastructures of Control Systems Technology	16,250
		Mobile / Wireless Networking	31,030
Geo	UGM	Development of Sustainable Slope Protection in Tropical Residual Soils	16,585
ICT	KMITL	Derating Factors in PWM Inverter-Fed Induction Machine & Modelling for PWM Voltage Source Converter Controlled Power Transfer for HVDC Application	3,022
		Inverted Pendulum Control Systems	5,235
		Design and Development of A Temporal Information Warehouse	2,030

*Special Equipment for Collaborative Research Program 2003*

**—Thesis Research Support Program—**

The Thesis Research Support Program grants thesis research funding for those AUN/SEED-Net students who had enrolled in Host Institutions before the Collaborative Research Program was materialized. Students whose thesis research topics are outside of the scope of Collaborative Research Themes set by Host Institutions can also be supported. For the Japanese Fiscal Year 2003, the Project thesis research support to 14 current students at CU, KMITL, USM, and UP.

**—Field Wise Seminars and Promotional Trips—**

The main objective of the Field-wise Seminar Program is to facilitate gathering of all experts concerned to discuss the Project and systematize collaborative research activities among Member Institutions. During the Japanese Fiscal Year 2003, 14 seminars for all 9 engineering fields were organized not only at the respective Host Institutions but also at the Non-host Member Institutions. These involved 46 dispatches of Japanese professors to participate in the events.

The details of the 14 Field-wise Seminars within the Japanese Fiscal Year 2003 are given in APPENDIX 4.

On the other hand, the Project also provided financial support to all Host Institutions (except two Singaporean universities) to visit several Member Institutions for the purpose of recruitment of the excellent candidates for the Master’s and the Ph.D. Sandwich Programs.

**—Short-term Visit Program to Japan and Japanese Professors Dispatch Program—**

The Short-term Visit Program to Japan and Japanese Professors Dispatch Program were devised in order to allow visits of Japanese professors to Member Institutions, and visits of students and advisors to Japan, in order to strengthen academic and research capabilities.

During the Japanese Fiscal Year 2003, 19 teaching staff of Member Institutions participated in the Short-term Visit Program to Japan mainly to discuss Collaborative Research, and 19 Japanese professors from Japanese Supporting Universities were dispatched to Host Institutions under the Japanese Professors Dispatch Program mainly to discuss Collaborative Research, give lectures and supervise AUN/SEED-Net students.

The details of Short-term Visit Program to Japan and Japanese Professors Dispatch Program are given in APPENDIX 5 and 6, respectively.

**III. Special Activity: IT Projects**

**—IT-Enhanced Courseware Development Regular Project—**

The main objectives of the IT-Enhanced Courseware Development Regular Project are to familiarize teaching staff of Member Institutions with hardware independent IT-enhanced courseware and encourage them to develop such materials; to encourage Member Institutions to jointly or independently develop inexpensive and user-friendly courseware development software tools; and to share IT-enhanced courseware produced among Member Institutions so that such joint effort would accomplish the objectives of the AUN/SEED-Net stipulated in the Cooperative Framework. There were in total 14 projects approved in the Japanese Fiscal Year 2003.

IT Regular Project				
No.	MI	Title	Academic Level	Duration (hrs)
1	ITC	Power Electronics	B (4th yr)	60
2	ITB	Control Engineering	B (3rd yr)	43
3	UGM	Geothermal Geotechnology (The Geology of Geothermal Systems)	M	15
4	UGM	Basic Physics I	B (1st yr)	15
5	NUOL	Circuit Theory	B	16-32
6	USM	Introduction to Data and Computer Communication	B (3rd yr)	16
7	UM	Computer Programming (first year Engineering course)	B (1st yr)	at least 15
8	DLSU	Web-Based Course on Basic Electrical Circuit Analysis One	B (2 yr)	37
9	UP	Interactive Tutorial Software on Mechanics of Rigid and Deformable Bodies	B (2-3 yr)	36* 3 parts
10	CU	Multimedia Communication: An Elearning Based Approach	M	15
11	KMITL	Digital Circuit and Logic Designs	B	15
12	BUU	Microprocessors (Principles and Application)	B	45
13	HCMUT	Fundamentals of Programming Languages	B	30
14	HUT	Objected- Oriented Programming Techniques	B	45

### —The AUN/SEED-Net 3<sup>rd</sup> IT Workshop and the 2<sup>nd</sup> IT Committee Meeting—

The AUN/SEED-Net 3<sup>rd</sup> IT Workshop on “Sharing the Experience and Exchanging the Idea on Developing IT-Enhanced Courseware” and the 2<sup>nd</sup> IT Committee Meeting were jointly organized by the JICA Project for AUN/SEED-Net and the AUN/SEED-Net IT Committee on February 26, 2004 in Kuala Lumpur, Malaysia. The objectives of the Workshop were to present the outcome of the approved IT-Enhanced Courseware Development Regular Projects conducted at the respective Member Institutions; to exchange ideas; and to share the experiences among participants. The participants in the Workshop comprised 36 representatives from Member Institutions, the AUN/SEED-Net Secretariat, the Japan International Cooperation Agency (JICA), and the Japanese Supporting University Consortium (JSUC).

At the 2<sup>nd</sup> IT Committee Meeting, it was agreed that the survey on the use of and feedback on IT equipment and courseware should be conducted at each Member Institution. Moreover, it was also reiterated at the Meeting that the rights of the IT Courseware developed under the IT-Enhanced Courseware Development Regular Project belong to all Member Institutions of the AUN/SEED-Net Project.

## IV. Other Activities

### **Courtesy Visit at the Prime Minister’s Department of Malaysia**

The Secretariat and the JICA Project Team for AUN/SEED-Net, led by Prof. Dr. Panitan Lukkunaprasit, and Dr. Fujiwara Okitsugu, Academic Advisor, paid a courtesy visit to Ms. Patricia Chia Yoon Moi, Director of the External Assistance Section, Economic Planning Unit, Prime Minister’s Department of Malaysia, on February 27, 2004.

The discussion focussed on the sustainability issue of the Project. It was suggested that any support for the Project should come from the Ministry of Education of Malaysia, which oversees UM and USM.

### **Courtesy Visit at Ministry of Education of Thailand**

On May 26, 2004, Prof. Dr. Panitan Lukkunaprasit, Executive Director, paid a courtesy call on Assoc. Prof. Dr. Pavich Tongroach, the new Secretary-General of the Commission on Higher Education (CHE) of the Ministry of Education (MoE) of Thailand.

In addition to a brief report of the AUN/SEED-Net Project, Prof. Panitan also discussed the sustainability issue with Assoc. Prof. Dr. Pavich Tongroach. Prof. Panitan raised the importance of setting up of scholarships within each host country to support foreign students to study at the Host Institutions. The Secretary General showed strong interest in the Project and lent full support for the sustainability of the Network,

and suggested setting up a fund for supporting scholarships for foreign students.

### **Courtesy Visit at Ministry of Education of Indonesia**

On June 2, 2004, Prof. Dr. Panitan Lukkunaprasit, Executive Director paid a courtesy visit to the Director General of the Department of Higher Education, Ministry of National Education of Indonesia, Prof. Dr. Satryo Soemantri Brodjonegoro. The visit was also participated by Prof. Dr. Djoko Suharto from Institut Teknologi Bandung (ITB), Mr. Tachibana from JICA Indonesia Office, Prof. Dr. Kazuo Tsutsumi, Chief Advisor, and Mr. Hiroshi Iwadate, Program Coordinator of JICA Project for AUN/SEED-Net.

On this occasion, Prof. Dr. Panitan and Mr. Iwadate made a brief progress report of the AUN/SEED-Net Project as related to UGM and ITB of Indonesia. A discussion on sustainability of the Project after the five-year contract with JICA was made in which Prof. Panitan proposed the idea of establishing a fund, with annual contribution from Thailand, Malaysia, the Philippines, and Indonesia, to support scholarships for Master’s Degree Program, as earlier suggested by Assoc. Prof. Dr. Pavich Tongroach, Secretary General of Commission on Higher Education (CHE), Ministry of Education of Thailand. Prof. Satryo Soemantri Brodjonegoro fully supported the proposal.

## V. Monitoring

Monitoring is one significant activity of the Secretariat's functions, aimed to accomplish and maintain the high quality outcome of the Project, as part of the Quality Assurance scheme.

The Secretariat has set up a Monitoring scheme in 2 levels; that is, internal assessment and external audit. Internally, Member Institutions are requested to assign a Monitoring Committee for each project/student. The Monitoring Committee is to regularly report and evaluate the progress of the project/student to the Secretariat; at the same time the students and scholars are also requested to submit a Progress/Technical Report at regular intervals. It is encouraging that more and more Member Institutions have started to cooperate seriously in the Monitoring activity.

Since December 2003, the Secretariat together with the JICA Team for AUN/SEED-Net, in addition, has carried out monitoring visits to CU, KMITL, DLSU, UP, UM, USM, ITB, and UGM. The visits allowed the Secretariat to gather feedbacks on the difficulties, problems, and recommendations directly from the faculties and the students. The monitoring visits have also allowed the Secretariat to interact with the Faculties involved in shaping up the desired structure of some programs of study.

## VI. Sustainability

AUN/SEED-Net has been established with the aim of sustainability in the long term. To accomplish this aim, preliminary brainstorming was made at the 1<sup>st</sup> Meeting of Joint coordinating Committee (JCC) of Thailand on July 30, 2003, followed by the setting up of the Sub-committee on Sustainability at the 5<sup>th</sup> Steering Committee and Year 2003 Annual Meeting on August 15, 2003, at CU, Bangkok. The Sub-committee was comprised of the AUN/SEED-Net Executive Director, Prof. Dr. Ahmad Yusoff bin Hassan of USM (in the capacity of the Steering Committee chairman at that time), Prof. Dr. Zahari Taha of UM, Prof. Dr. Yue Chee Yoon of NTU, Assoc. Prof. Dr. Julius Maridable of DLSU, and Prof. Dr. Soe Yin of UY. The First Sub-Committee Meeting was held on February 11, 2004, at USM, Penang.

The issue was brought up again at the 6<sup>th</sup> Steering Committee Meeting on February 12. Subsequently, several visits to the ministerial departments in charge of higher education of member countries were made, including Malaysia in February, Thailand in May, and Indonesia in June 2004.

All Member Institutions have high expectations of the Project. The worthiness of AUN/SEED-Net prompts every party concerned to put a concerted effort to render sustainability of the Network even after year 2008 which is the end of the first phase of JICA support. It has been contended that AUN/SEED-Net will be able to sustain after the end date if JICA can continue its support, although it may be at a lesser level, while the Member Institutions can contribute to fill up the gap, tentatively through the allocation of ministerial budget of each country. The position paper for sustainability is still being formulated. It will be submitted, once finalized, to ASEAN University Network (AUN) Board of Trustees for further consideration.

**Appendix 1: Ph.D. Sandwich Program JFY 2003 & 2004**

JFY 2003 : 21 applicants : 6 awardees

JFY 2004 : 30 applicants : 10 awardees

No.	Sending Institution	Field	Name	Host Institution	Japanese University
<b>JFY 2003</b>					
1	ITC	CE	Mr. Lim Sokyay	CU	Hokkaido
2	UGM	EEE	Mr. Nazrul Effendy	CU	TIT
3	UY	EEE	Ms. Cho Cho Thet	CU	TIT
4	NUOL	ICT	Mr. Kham Khanthavivone	KMITL	Hokkaido
5	NUOL	UGM	Mr. Khamphetch Bounnady	KMITL	Tokai
6	UY	UGM	Ms. Su Su Kyi	UGM	Kyoto
<b>JFY 2004</b>					
1	ITB	CE	Mr. Wibowo Sony Sulaksono	CU	Hokkaido
2	UGM	CE	Mr. Ashar Saputra	CU	Hokkaido
3	HCMUT	CE	Mr. Le Trong Nghia	CU	Hokkaido
4	UGM	EEE	Mr. Sarjiya	CU	Tokyo
5	ITC	ChE	Mr. Hak Sok Chea	DLSU	TIT
6	HCMUT	ChE	Mr. Tran Hai Ung	DLSU	TIT
7	HCMUT	ChE	Mr. Huynh Ky Phuong Ha	DLSU	TIT
8	HUT	ME	Mr. Le Xuan Truong	ITB	Toyohashi
9	HCMUT	ITB	Mr. Nguyen Dinh Tu	UGM	Kyoto
10	HCMUT	Env	Ms. Le Thi Hong Tran	UP	TIT & Shizuoka

**Appendix 2: Ph.D. Program in Japan JFY 2003 & 2004**

JFY 2003 : 30 applicants : 4 awardees

JFY 2004 : 37 applicants : 9 awardees

No.	Sending Institution	Field	Name	Japanese University
<b>JFY 2003</b>				
1	ICT	KMITL	Ms. Sutteera Puntheeranurak	Tokai
2	ICT	NUOL	Mr. Khamphong Khongsomboon	Tokai
3	ME	ITB(INA)	Mr. Sandro Miharadi	Toyohashi
4	GeoE	UGM	Mr. Lucas Donny Setijadji	Kyushu
<b>JFY 2004</b>				
1	CU	EEE	Mr. Surachai Chaitusaney	Tokyo
2	HCMUT	CE	Mr. Tran Tuan Anh	Hokkaido
3	HCMUT	GeoE	Mr. Ho Trong Long	Kyushu
4	HUT	EEE	Mr. Nguyen Hoang Hai	Tokyo
5	KMITL	ICT	Ms. Panarat Rawiwan	TIT
6	UGM	EnvE	Mr. Mohammad Kholid Ridwan	TIT
7	UGM	ME	Mr. R. Rachmat A. Sriwijaya	TIT
8	UM	ManuE	Mr. Chin Joo Tan	Toyohashi
9	USM	MatE	Mr. Yeoh Fei Ye	Toyohashi

**Appendix 3: Collaborative Research Projects JFY 2003**

Field	Project Title	Principle Investigator	No. of Students		Amount of Support (USD)
			M	D	
EEE	1. Mobile / Wireless Networking	Dr. Watit	3	-	26,007
	2. Development of Infrastructures of Control Systems Technology	D. David	2	-	
	3. Prosodic Study for Thai Speech Recognition	Dr. Somchai	1	-	
CE	1. Investigating Travel Attributes and Alternative Combination Sets of Travel Demand Management	Dr. Sorawit	1	-	32,524
	2. Modeling Car-following Behaviors of ASEAN Drivers	Dr. Sorawit	1	-	
	3. Innovation in Design and Construction of Infrastructures in Bangkok Subsoils	Dr. Supot / Dr. Wanchai	1	-	
	4. Improvement of Construction Productivity in Developing Countries	Dr. Visuth	2	-	
	5. Innovation in Design and Construction of Infrastructures in Bangkok Subsoils	Dr. Wanchai	-	1	
ICT	1. Inverterd Pendulum Control Systems	Dr. Jongkol	1	-	30,872
	2/3. Derating Factors in PWM Inverter-Fed Induction Machine &Modelling for PWM Voltage Source Converter Controlled Power Transfer for HVDC Application	Dr. Vijit	2	-	
	4. Design and Development of a temporal information warehouse	Dr. Suphamit	1	-	
	5. On-Line Lao Handwritten Feature with Automatic Noise and Real Feature Identification	Dr. Boontee	-	1	
	6. Recognition of Laotian spoken Vowels using spectral vocal tract transfer function on Bark Scale	Dr. Kraisin	-	1	
	7. Distributed Network Management System via Web Service and Mobile Agent	Dr. Voravat	-	1	
	ChE	1. Catalytic Processes for the Production of Syngas using Natural Gas	Mr. Luis F. Razon	3	
2. Microwave Pyrolysis of Medical Plastic Wastes		Dr. Susan A. Roces	1	-	
3. Recovery of Solvent from the Semiconductor Washings via Selective Separation by Molecular Affinity Modification		Dr. Noel P. Cabigon	1	-	
Env	1. Anaerobic Digestion of Organic Fraction of Municipal Wastes Using High-Rate Slurry	Dr. Analiza P. Rollon	-	1	11,980
Manu	1. Investigations in Minimal Cutting Fluid application in high speed milling of hardened steel molds using solid carbide mills.	Dr. Hamdi	1	-	20,310
	2. Development and fabrication of miniature heat exchangers through percision machining / joining / slurry polishing and their performance evaluation through experimental and analytical techniques	Dr. Hamdi	1	-	
	3. Intelligent Monitoring of Cutting Tool Wear and Failure	Dr. Zahari Taha	1	-	
Mat	1. Synthesis and Characterization of Vanadium Oxide Nanotube	Dr. Azizan Aziz	1	-	13,081
	2. Application on lead free solders properties and reliability	Dr. Luay Hussain	1	-	
	3. Mechanical and Microstructural Response on the Thermal Behaviour of Ti-Al-X Intermetallic Alloy System with respect to Material Failures	Dr. Ahmad Fauzi	1	-	
	4. Determination of Transport Properties in the Prospective Oxide-scale Formation of the Ti-Al-X Multiphase Alloy Systems	Dr. Rizal Astrawinata	1	-	
Geo	1. Development of sustainable slope protection in tropical residual soils	Dr. Dwikorita Karnawati	1	1	38,366
	2. Geothermal Exploration at the Ungaran Geothermal Prospect, Central Java to Support the Program of Alternative Energy Development	Ms. Pri Utami	1	-	
	3. Integrated Exploration Geology of Gold and Copper Mineralisation for the Sustainable Development of Mineral Industry	Dr. I. Wayan Warmada	2	-	
ME / AE	1. High Velocity Impact on Multilayered Composites	Dr. Ichsan S. Putra	1	-	14,176
	2. Development of Vibration-based Failure Detection Technique Using ODS Analysis	Dr. Ir. Zainal Abidin	3	-	
<b>Total</b>			<b>35</b>	<b>6</b>	<b>220,042</b>

**Appendix 4: Field-wise Seminars JFY 2003**

Field	Institution	1st FWS				2nd FWS				
		Date	Venue	Participants	JP Professors	Date	Venue	Participants	JP Professors	
CE	CU	12-13 Nov 03	Bangkok	14	3	10-11 Mar 04	Ho Chi Minh	18	3	
ChE / EnvE	DLSU / UP	9-10 Sep 03	Jogjakarta	12	3	1-3 Dec 03	Manila	11	3	
EEE	CU	27-28 Oct 03	Bangkok	11	2	11-12 Mar 04	Bangkok	9	2	
GeoE	UGM	25-26 Aug 03	Ho Chi Minh	6	3	19-20 Jan 04	Penang	15	6	
ICT	KMITL	28-29 Aug 03	Manila	12	2	-	-	-	-	
ManuE	UM	23-24 Oct 03	Jogjakarta	6	4	17-18 Mar 04	Kuala Lumpur	13	4	
MatE	USM	21 Oct 03	Penang	11	4	22-23 Jan 04	Manila	13	4	
ME / AE	ITB(IND)	5-6 Feb 04	Ho Chi Minh	12	3	-	-	-	-	
<b>Total number of dispatches of JPN professors (1st FWS)</b>					<b>24</b>	<b>Total number of dispatches of JPN professors (2nd FWS)</b>				<b>22</b>

**Appendix 5: Short-term Visit Program to Japan JFY 2003**

No.	HI	Field	Number of Scholars	Destination : Japanese University
1	CU	CE	7	Hokkaido
2	DLSU	ChE	4	TIT
3	UGM	Geo	3	Kyushu
4	UGM	Geo	3	Kyoto & Kyushu
5	ITB	ME/AE	1	Keio
6	ITB	ME/AE	1	Toyohashi
<b>Total</b>			<b>19</b>	

**Appendix 6: Japanese Professors Dispatch Program JFY 2003**

No.	HI	Field	Number of Japanese Professors	Japanese University
1	CU	CE	5	Hokkaido
2	CU	EEE	1	Tokyo
3	DLSU	ChE	2	TIT
4	UGM	Geo	4	Kyushu
5	UGM	Geo	1	Kyoto
6	KMITL	ICT	2	Tokai
7	UM	Manu	1	Keio
8	USM	Mat	2	Tokai
9	ITB	ME/AE	1	Keio
<b>Total</b>			<b>19</b>	

## Appendix 7: List of Acronyms/Abbreviations

### Member Institutions under AUN/SEED-Net

BUU	Burapha University
CU	Chulalongkorn University
DLSU	De La Salle University
HCMUT	Ho Chi Minh City University of Technology
HUT	Hanoi University of Technology
ITB(BRU)	Institut Teknologi Brunei
ITB(IND)	Institut Teknologi Bandung
ITC	Institute of Technology of Cambodia
KMITL	King Mongkut's Institute of Technology Ladkrabang
NTU	Nanyang Technological University
NUOL	National University of Laos
NUS	National University of Singapore
UBD	Universiti Brunei Darussalam
UGM	Gadjah Mada University
UM	University of Malaya
UP	University of the Philippines
USM	Universiti Sains Malaysia
UY	University of Yangon
YTU	Yangon Technological University

### Engineering Fields under AUN/SEED-Net

AE	Aeronautical Engineering
CE	Civil Engineering
ChE	Chemical Engineering
EEE	Electrical & Electronics Engineering
Env	Environmental Engineering
Geo	Geological Engineering
Manu	Manufacturing Engineering
Mat	Materials Engineering
ME	Mechanical Engineering

### Institutions and Others

AF	ASEAN Foundation
ASEAN	Association of South East Asian Nations
AUN	ASEAN University Network
AUN/SEED-Net	ASEAN University Network / Southeast Asia Engineering Education Development Network
FCU	Field Coordinating University
HI	Host Institution
JFY	Japanese Fiscal Year (April – March)
JICA	Japan International Cooperation Agency
JPY	Japanese Yen
JSUC	Japanese Supporting University Consortium
JSUs	Japanese Supporting Universities
MI	Member Institution
SI	Sending Institution