

Newsletter of NYUST

National Yunlin University of Science & Technology
Taiwan R.O.C.

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President, Dr. Tsong-Ming Lin, of NYUST

President Lin Delineates Visions of NYUST

Preface

After his inauguration on 1 August 2001, President Lin delved into the state of the university and barriers it faces. With a great deal of experience and eminent performance in enterprises, the government, and academic society, President Lin portrayed the directions and emphasized the future of each working unit.

Personal Data

Education:

1. Ph.D. in Industrial Management, Clemson University, S.C., U.S.A.
2. MBA, Eastern New Mexico University, New Mexico, U.S.A.

Work Experience:

1. Director General, Employment and Vocational Training Administration Council of Labor Affairs, Executive Yuan.
2. Director General, Department of Technological and Vocational Education, Ministry of Education.
3. Director General, Bureau of Solid Waste Management, Environmental Protection Administration, R.O.C.

4. Director General, Bureau of Environmental Monitoring and Data Processing, Environmental Protection Administration, R.O.C.
5. Dean of Students, National Taiwan Institute of Science and Technology.
6. Professor, National Taiwan University of Science and Technology.
7. Associate Professor, National Taiwan Institute of Science and Technology.

Achievements

Integration and Planning:

1. Reorganized Formosa Plastics Corporation, U.S.A.: turned losses into profits.
2. Shortened the foreign workers' application time for permission to work in Taiwan from six months to five days.
3. Established an environmental information system, making overall performance ten times better.

Academic and Administration:

1. An experienced administrator by having worked as Department Chairman, Dean of Student Affairs, Director General of Department of Technological and Vocational Education, Ministry of Education, Academic Counselor for developing university affairs, Director of Academic Association.
2. The President has proven himself a master at risk management by successfully quelling the disturbance caused by crowds of upset students who were demonstrating at both the International Business College and Da Han Industrial and Commercial College. Also, he has repeatedly shown that he understands the principles of subverting all kinds administrative risks at schools.
3. Marketing: Outstanding performance in marketing while working for the Formosa Plastics Corporation, U.S.A.

Future Strategy on School Administration

I. Visions for NYUST:

Living in Yunlin; Embracing the World.

II. Objectives:

1. Adopting Total Quality Management to upgrade NYUST's academic status, and make it an internationally prestigious university.
2. Linking departments and leading industries via the Internet.
3. Establishing NYUST's sustainable competitive advantages.
4. Evolving into a world-class university of science and technology.

III. The symmetry of NYUST's development

1. Balancing the development of expertise and humanities.
2. Developing hardware and software equally.
3. Supporting both academic research and practical applications.
4. Contributing to industries with our unique human resources.
5. Advancing domestic growth and international marketing.

IV. Primary dimensions of the university development

1. The educational system and the enrollment: In response with the trend of the world, Lin promotes the six-year program on a trial basis.

- a. Progressing the two-year programs into the four-year programs or graduate schools.
- b. Holding a six-year program tentatively:
 - Six-year indicates a four-year program plus a master's program.
 - The six-year-program students are required to intern in their industries for one or two semesters.
- c. Increasing master's and doctoral program quota for employees.

2. Academia and research: raising the quality of academic research and propelling the "Elite" program.

- a. Hosting seminars and praising outstanding researchers.
- b. Setting promotion criteria requirements to encourage teachers to promote and reach the goal of evaluation by the University (instead of by the Ministry of Education).
- c. Cooperating with related academic institutions to build up a first-rate development center.
- d. Integrating all departments and graduate schools and advertising our specialties.

3. Teaching and work: Elevating faculty's performance in both academic and pragmatic fields by implementing the "Faculty 3 +1" Program. "3" denotes three-year teaching experience while "1" means to work and research in the industry for one year; both are accounted for seniority.

- a. Instituting an Industry Consulting and Service Center to serve and cooperate with the industry and business sectors.
- b. Hosting seminars to pay tribute to both teachers'

work in the industrial and business sectors, and to distinguished faculty members' achievements on campus.

- c. Making inventions, patents, and other exceptional achievements the criteria and requirements for promotion.
- d. Helping departments cooperate with the industries.

4. Student Training and Counseling: Executing "Student 3 +1" Program. "3" refers to language proficiency certificate, professional certificate, and the certificate of club participation; "1" indicates a diploma.

- a. Setting up a scholarship system to attract more first-class students.
- b. Enhancing students' language proficiency.
- c. Extolling distinguished instructors' and students' monographs.
- d. Balancing the curriculum of both humanities and general-knowledge courses.
- e. Career planning assistance for students.
- f. Commending distinguished counseling staff members and teachers.

5. Personnel and Administration: Encouraging participation in discussion and helping decision-making in a harmonious atmosphere.

- a. Promoting all staff members' welfare and benefits.
- b. Adopting suggestions.
- c. Establishing a stratified system within the school wherein all personnel have their own responsibilities.
- d. Constructing an open and objective promotion system.
- e. Spurring personnel to pursue further education.
- f. Admiring superior administrative personnel.
- g. Introducing "a date with the President," a new activity designed to invite participants to offer their diverse ideas and suggestions.
- h. Intensifying the development of an integrated campus Internet community.
- i. Assuring complete follow-ups.

6. Budget and its source: Raising funds to promote the school and fully utilizing the resources.

- a. Having the Center for Small and Medium Business Incubation actively involved in the fund raising and cooperate with the industries to develop high-technology.
- b. Opening more Master's programs (night school) for full-time workers; promoting Distance Learning (including network instruction).
- c. Allocating funds systematically and promoting the concepts of cutting down expenses.

7. Off-campus marketing: be in good rapport with the industries to broaden our services.

- a. Setting up a marketing system to merit the school.
- b. Expanding serving dimensions to Mainland China and international community.

- c. Encouraging teacher and student exchanges; co-research with overseas college teachers and encourage students on both sides to take classes from each other's schools.
- d. Striving for being in charge of important domestic and overseas conferences.
- e. Enhancing interactions with commuting students to work out the Long-Tan Road problem.

8. Alumni and contact: helping set up a contact network and making them proud of the University.

- a. Assisting the alumni association to set up a contact network and keeping in touch on a regular basis.
- b. Assisting alumni in enhancing their talents, finding jobs, starting business, pursuing advanced education, and acquiring additional training.
- c. Commending prominent alumni.

Remarks

As one of the leading institutes of higher learning in Taiwan, NYUST enjoys a solid reputation both domestically and abroad under the capable direction of President Lin and his staff. However, the university is confronted with considerable challenges ahead as the result of local and international changes, such as Taiwan's entry into WTO, introduction of direct communication links across the Taiwan Strait, and the inevitable increasing number of competing colleges on the island. As we grow, it will be necessary to devise strategies that allow us to raise our academic status, advertise our specialties, expand cooperation with business enterprises and government agencies to stimulate development, and participate in the growing international academic arena. These are important issues that need to be considered in framing the administrative strategy of the university.

The Colleges of NYUST

Since its establishment, the NYUST has set up four colleges: College of Engineering, College of Management, College of Design and College of Humanities and Science. Following is a brief account of each college.

College of Engineering



The College now offers both bachelor's and master's degrees in the Department of Mechanical Engineering, the Department of Electrical Engineering, the Department of Electronic Engineering, the Department of Environment Safety Engineering, the Department of Construction Engineering, and the Department of Chemical Engineering. In addition, it possesses the Graduate School of Chemical Engineering & Disaster Prevention and the Doctoral Program of Engineering Technology. There are also the Building Material Testing Center, the Precision Instrument Center, the Industrial Pollution Prevention and Research Center, the Water Testing Center, as well as the Water-soil Resources and Disaster Prevention Technology Center; these provide consulting services to the industries. Moreover, under the "Medical Engineering Education Enhancement Program" set by the Science and Technology Consulting Office of the Ministry of Education, the College is promoting a medical engineering curriculum that will include a Graduate School of Information and Engineering, a Graduate School of Opto-electronics & Engineering, a Graduate School of Material Engineering, and the integration of a multi-area curriculum. Currently, the two-year, four-year, master's and doctoral programs have qualified the College for more doctoral programs tailored to the needs of each department.

College of Management



A management group has existed since the establishment of the school and founded the Management of College when the University was upgraded from an institute in 1997. There are four undergraduate schools and graduate schools in the College of Management: Industrial Management, Business Administration, Information Management (MIS), and Finance. Moreover, there are also the undergraduate school in the Department of Accounting, Center for Business Automation, and the Medical Management Research Center.

In addition to the existing five undergraduate schools, five graduate schools, and twelve curricula, the College plans to set up more undergraduate and graduate schools that can provide services to the business, industrial, MIS, Finance and Accounting sectors.

College of Design



The College of Design consists of the doctoral program of Design, the bachelor's and master's programs in the Department of Industrial Design, the Department of Visual Communication Design, and the Department of Space Design; the Graduate School of Computation Design; Design Research Center; and the Center for Creation and Incubation. All of these closely cooperate with leaders in the industrial sector.

The development plan for the future of the College is to integrate all the resources of its undergraduate schools, graduate schools, and the teaching units of the centers. The college will promote international exchange programs with overseas universities, recruit new and highly qualified faculty members, and enhance the quality of pedagogical and the competitive edge on research and services so as to stand out the features of the College.

College of Humanities and Science



The College of Humanities and Science contains the Department of Applied Foreign Languages, which offers two- and four-year bachelor's programs and the Master degree program. It also features the Graduate School of Cultural Asset Conservation, the Graduate School of Technical and Vocational Education, Graduate School of Chinese Studies, Graduate School of Leisure & Exercises Studies, and Center of Educational Curriculum.

This College also has the Technical and Vocational Education Center and the Language Center, both of which

are for research and collaboration with the industries. In addition, the college is responsible for the planning and curriculum of science, the humanities, and general education, and provides instructors for extensive education and cooperation with the industries.

By holding the educational purposes of the university, the college has strived to achieve these goals and still conducts academic research. In future years, the College will set up new undergraduate and graduate schools in order to meet the needs of the market and the requirements of NYUST.

Micro-Matching and the Precision Measuring Lab



Since 1994, Chia-Lun Kuo, an associate professor from the Department of Mechanical Engineering, in cooperation with his graduate students have jointed effort to execute the Micro Electric Discharging Machine Project under the grant of National Science Council. They developed the CNC vertical EDM and the CNC horizontal EDM in succession. It possesses the functions of axial exercise control, PC-based rotary encoder feedback, G code compatible, minimum resolution of 0.2 μm and ED Servo loop control (RC loop with variable R, C, V). The software was written in Visual Basic Windows system.

The Micro EDM Technique on MEMS (Micro Electronic Mechanic System)

The microelements of size between μm to mm are applied widely in the related fields of automobile, aviation, precision measuring, optics, medicine, biochemistry, and opto-electronic industries. Such equipment as engine nozzles, aspheric lenses, fiber ferrules, spinners, inject printer nozzles, CPU cooling micro fans, micro probes for IC testing, and the necessary microelements for future micro mechanical development, may be measured in such tiny units. Micro mechanics is of great difficulty because the processing precision needs to meet the dimension of micron standard, surface roughness under sub-micron mirror-graded conditions, and the needs for both 2D and 3D microelements.

Though the techniques of semi-conductor lithography and LIGA can resolve part of the above difficulties and pro-

vide 2D (or 2.5D) and some 3D microelements, the material used in the former is restricted to silicone and the later is electroplating. Therefore they are still suffering from the limitations of material, dimension, shape, facilities and the high cost of maintenance. On the other hand, the micro EDM and related micro precision technique, which are not affected by the above-mentioned disadvantages, are indeed important to the MEMS.

The research conducted in this lab is to develop different microelements and explore the processing techniques based on the Micro Electric Discharging Machine center combining with the manufacturing technique of micro magnetic polishing and micro laser welding.

Center for Business Automation



In 1995, in order to ensure compliance with the government's policies of upgrading industries and developing automation service in the commercial environment, NYUST established a multidisciplinary advanced research center, the Center for Commercial Automation. The four main objectives of the CCA at NYUST are these: (1) Establishing related legislatures, regulations, and standards for commercial automation, (2) Providing advanced research in the logistic and distribution technology, retail business management, information technology, and efficient spatial design, (3) Developing dynamic curriculum and extended professional training for teachers in the area of commercial modernization and automation, and (4) Providing strategic diagnosis and consultation for both governmental and private sectors. Owing to the significant accomplishments and contributions both in the advanced research and public services, the Center has been recognized by the Ministry of Education as the national research and service center in commercial automation since 1998. The University thus became a center of modernization and automation and hopes to be ranked among the best universities in the world.

The core achievements of the Center are twofold: first, the successful experience in the academic resources consolidation across the entire campus which triples its research competitiveness both in the capacity and capability; secondly and subsequently, the development

of the state-of-the art integration technology, or the advanced commercial environment. The research specialties of faculties and research associates in CCA emphasize in the integration of nice segments of commercial modernization and automation: (1) Logistics and distribution, (2) Information technology, (3) Marketing and Distribution on Channels, (4) Electronic financial/banking system, (5) Shopping environment and facility design, (6) the Service system, (7) Environmental issues, (8) Resource producing skills, and (9) Manufacturing techniques. The Center also established ICEC (Integrated Campus-Wide Electronic Commerce Architecture at NYUST) that includes CALS (Commerce at Light Speed), QR (Quick Response System) and SERP (Strategic Enterprise Resource Planning).

By using fiber-optics technology, the Integrated Campus-wide Electronic Commerce Architecture (ICEC) of NYUST connects seven major facilities developed for the Commercial Automation Curriculum: (1) the Campus Supermarket, (2) the Italian coffee Shop at the Management College, (3) the Campus Internet Shopping Center, (4) the automated Distribution Center, (5) the Campus Geographic Information System, (6) the Real-time Distribution Control System, and (7) Automated Manufacturing. In other words, the ICEC has integrated commerce, information, product, currency, service and design. For instance, the Campus Supermarket is connected by a POS-to-EC General Integration Platform that successfully integrates the FoxPro-based database of POS and the BD2 based database of the Campus Internet Shopping Center. Also, an EC-to-DC General Integration Platform has been developed to integrate the information flow and the accounting information between the Electronic Supermarket and the Automated Distribution Center. In terms of the network architecture, the customers (i.e., the students, faculty, and staff) are connected to the Electronic Supermarket. The Campus Supermarket and the Italian Coffee Shop are connected under the Internet structure. The Campus Supermarket is connected with the Automated Distribution Center under the Extranet structure. The Distribution Center is equipped with the Local AreaNetwork (LAN).

Design Research Center

Origin:

With the rapid technological development in developed countries around the world, our traditional manufacturing industries are facing unprecedented pressures. Industries of pirating in the old days or even of high labor intensity will definitely be rejected by international society and only those aiming at skill/technology-intensive, high-added value, and design-oriented products can survive. In accordance with the national economic development strategies, NYUST will integrate the resources from every department to carry out research and development in the field of technology and improve the regional design culture level to bridge the gap between industry and academia.



In addition, it will foster outstanding design talents required by the industries. By doing so, NYUST can help industries transfer, upgrade industries, and motivate national economic development. Therefore, the Center for Design (service) and Research (promotion), also known as the Center for Design and Research, at NYUST was established on the first of August 1997.

Features:

The Center for Design Research (CDR) mainly focuses on integrating the services and resources provided by the NYUST's design education program, including teaching, research, technical cooperation, and consultation in order to develop professional design education and practical applications. The main features of the CDR are as follows:

- a. To provide the design group with adequate teachers, resources, and facilities, incorporating both teaching and research.
- b. To integrate manpower and facilities from the departments of engineering, management, and design to conduct researches on the following professional technological fields.
- c. Conducting research on design technology and evaluating its results.
- d. Hosting seminars and presentations on design technology.
- e. Collecting the latest information and data of design technology for the faculty, students and people from industrial and commercial circles.
- f. Cooperating with the public and private sectors and enterprises, exchanging talented people as well as conducting research with the industry, government, and academia to upgrade the local standards of local designers' skills.
- g. Assisting local public and private sectors with special projects, providing technical consulting services, and evaluating products.
- h. Participating in the design-related research plans (in and out of NYUST.)

Language Center

People know that a Language Center exists at NYUST, but most have no idea where it is located and what it offers.

The Language Center was established on August 1, 1997 when the University was upgraded from an institute. It is a research unit affiliated to the College of Humanities but is independent of the Department of Foreign Language (DAFL). It is responsible for offering language classes and provides faculty from DAFL multiple instruction materials—textbooks, workbooks, videos, audiotapes, CDs, and other resources. The Center features a selection of audio and videotapes and materials with necessary equipment for individual students to pursue further study using this material. It also provides faculty from DAFL multiple instruction materials—text, workbook, video, audio and other facilities.



Other features include:

1. Self-learning classrooms are open to the faculty, staff, and students:
 - A selection of language learning material and facilities including magazines, books, audio and video tapes, cassettes and CD's.
 - Insisting on an immersive English environment by asking visitors not to speak Chinese on the premises.
 - Open from 9 am to 8 PM continuously.
2. An open learning area:
 - Situated on the second floor of the College of Humanities, the Center offers a quiet corner and resting area for the faculty and students to read the latest magazines and reference books. In addition, an electronic bulletin board constantly displays the latest English usage and information.
3. The most advanced English laboratory:
 - The Center provides the most advanced instructional facilities that have enhanced the teaching efficiency.
4. The Center provides instructional facilities to instructors who teach general courses.
5. It collects various language efficiency test material to meet the trend of language learning and helps the University hold the foreign language efficiency tests. Other business includes extensions and diversified language activities.

The Language Center has been meticulously built into a professional-class language-learning environment.

Major International Cooperation and Educational Exchanges (From Feb. 2001 to Mar. 2002)

Time	Visitor	Guests	Content	Reception Personnel
2001/02/05	National Museum, Republic of Estonia	Roland Suits	Invited by the National History Museum to the Graduate School of Cultural Asset Conservation of NYUST, exchanged related experiences on the reconstruction of art pieces and cultural or historical relics.	Graduate School of Cultural Asset Conservation
2001/03/29	Massachusetts Institute of Technology	Ms. Beth Marcus	Visited the University and the College of Engineering	<ul style="list-style-type: none"> ; ECenter for University Development ; ECollege of Engineering
2001/04/08~ 2001/04/10	IFAS RWTH Aachen, Germany	Mr. and Mrs. Marcus	Visited the Department of Mechanical Engineering and exchanged opinions on the possibility of cooperation among related departments.	Department of Mechanical Engineering
2001/06/06~ 2001/06/07	University of Pittsburgh, USA	Professor Zan-Xiang Cheng	Discussed the contract between the two universities.	Center for University Development
2001/10/25~ 2001/10/26	Technology University of Queensland, Australia	Dean Wei-lin Chang	Delivered speeches on special topics; §Educational Direction, Management and Operation of the University in the 21st century; "and ; §The Internationalization of the Constructional Sector of Taiwan. ; " Had an academic seminar with the President of NYUST and several professors.	<ul style="list-style-type: none"> ; EDepartment of Construction Engineering ; ECenter for University Development
2001/11/20	Swinburne University of Technology, Australia	Professor Helmut Lueckenhausen	Held opinion exchanges on the possibility of future cooperation between the two universities	Center for University Development
2002/01/23	University of Brighton, UK	Ms. Alison Charles, International Officer/Deputy Head, International Relations Office	Held opinion exchanges on the possibility of future cooperation between the two universities	Center for University Development
2002/02/20	Southern Illinois University, USA	Dr. Walter Wendler, Chancellor of SIU Dr. Juh Wah Chen Dr. Max Yen	President and other two faculty members of NYUST's sister university, SIU visited and President Lin and several heads shared the symmetry of each university's development and exchanged opinions on the future cooperation between the two universities. In the afternoon, SIU visited Precision Measurement Lab. and Microelectronic Scope Lab.	<ul style="list-style-type: none"> ; ESceretary Office ; ECollege of Engineering ; ECenter for University Development

Major International Cooperation and Educational Exchanges (cont.)

Time	Visitor	Guests	Content	Reception Personnel
2002/03/12	De Montfort University, UK	Dr. Graham Chapman, Head of International Office Dr. Tom Cassidy, Head of Post-graduate Studies, Art and Design Department	Visited the university and discussed cooperation between the two universities on double master's degrees, exchanging teachers, and short-term visit by doctoral students.	<ul style="list-style-type: none"> ∫ College of Design ∫ Center for University Development
2002/03/12~ 2002/03/13	Graduate School of History, College of Chinese Social Science, Hu Bei University; Department of Chinese, Beijing University	Chairman Chen Zu-wu, Vice President Zhou Fu-ming, Professor An Ping-qiu, Professor Zhang Qin-shan, Professor Yang Zhong, Professor Liu Yu-cai, Professor Zhang Shao-kang, Professor Qi Yong-xiang	Exchanged scholastic conversation with NYUST faculty members and graduate students.	Master's Program of Chinese Studies
2002/03/13	Department of Applied Chemistry, Kogakuin University, Japan	Yasukazu Ohkatsu	Visited NYUST and discussed the "scientific and technological management" curriculum related issues.	College of Management
2002/03/14	University of Central England in Birmingham, UK	Julie Hardy, Head of International Development John Law, Head of Department of Fashion, Textiles and Three-Dimensional Design	Held opinion exchanges with NYUST on the possibility of future cooperation between the two universities.	<ul style="list-style-type: none"> ∫ College of Design ∫ Center for University Development

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