Introduction to Shantou University

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China
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Outline

汕頭大學
SHANTOU UNIVERSITY

Shantou University Facts

- A modern university with international perspective, founded in 1981 with the first enrolment in 1983
- The only privately funded public university in China, most of the funding from a private donation – Li Ka-shing Foundation
- Main campus covers an area of 1.26 square kilometres
- One of the "211 universities" with focus on providing unique education experiences to students and selected areas of research

Colleges/Schools of STU

A comprehensive University：

- Cheung Kong School of Arts and Design
- Cheung Kong School of Journalism and Communication
- College of Engineering
- College of Graduate Studies
- College of Liberal Arts
- College of Medicine
- College of Sciences
- School of Business
- School of Law
- School of Continuing Education

Faculty and Staff
(as of Mar 2007)

Faculty

Full Time	STU Main Campus	STU Medical College	Subtotal
Professors	93	49	142
Associate Professors	167	50	217
Lecturers	120	48	168
Others	30	10	40
Grand total	410	157	567

Faculty：567
Staff：719

Faculty and Staff
(as of Mar 2007)

Staff

Full Time	STU Main Campus	STU Medical College	Subtotal
Administrative Staff	206	60	266
Library Staff	62	20	82
Technical Staff	84	75	159
Logistic & Other Supporting Staff	172	40	212
Grand Total	524	195	719

Five Affiliated Hospitals
(as of Mar 2007)

Name of the Hospitals	Professors and Equivalents	Asso. Professors and Equivalents	Lecturers and Equivalents	Others	Total
The First Affiliated Hospital (general hospital with strength in Internal Medicine; 668 beds)	79	216	285	418	998
The Second Affiliated Hospital (general hospital with strength in Surgery; 516 beds)	41	154	198	310	703
The Tumor Hospital (offering comprehensive cancer treatment; 400 beds)	11	62	83	116	272
Mental Health Centre	6	13	22	35	76
Joint Shantou International Eye Center (JSIEC-CUHK/STU)	12	3	21	114	150

Graduates and Enrolment
(as of September 2007)

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Program	Current Students	Graduates (1985-2007)
Undergraduate	6,866	27,492
Master	1,333	1,441
Ph.D	84	58
Total	8,283	28,991

Graduates Employment and Alumni

■ Graduates hired by many multi-national corporations, local enterprises and organizations

■ According to follow-up survey, employers were very pleased with our graduates and ranked performance of 98.5％ of our graduates to be excellent and good

Employment Statistics

Year	No. of graduates	Employment upon graduation（%）	Final employment （%）
2003	1156	94.31	97.4
2004	1222	94.76	98.36
2005	1462	93.98	98.97
2006	1114	94.43	98.48
Total/Ave	4954	94.37	98.3

2006年总体就业率排行榜	
汕头大学（STU）	98.48%
华南师范大学	98.44%
华南理工大学	97.69%
广州中医药大学	97.16%
华南农业大学	95.90%
暨南大学	92.64%
中山大学	92.45%

Source of information: GD Department of Education

- ■ Encourage new education ideas, methods and practices that inspire students to engage in active learning, discoveries and innovation;
- ■ Support scientific discoveries and innovation for betterments of society, development and enhancements of economy and culture；
- ■ Nurture a student-centered education, associated support infrastructure and system, and campus culture；
- ■ Encourage academic freedom of inquiry, seek after the truth，nurture fairness, ethical conducts and professionalism；
- ■ Promote willingness to serve communities and society, and educate highly qualified, socially responsible globalized citizen in China.

- Continue education reform, develop new education paradigms which are compatible with the best education practice in the world;
- Carry out original research and technological innovation;
- Promote conscience of responsibility and dedication, contribute to social progress, enhance human spirit, nurture talents with "Aspiration, Knowledge, Perseverance, Achievement (有志、有识、有恒、有为)" ;
- Promote sustainable progress and establish STU a distinctive, internationally recognized university, to serve as Catalyst for Constructive Changes in higher education reform.

University Governance Reform

■**Internationally Compatible University Governance**

➢ **University Council (Board of Trustees) for appointments of senior administrators, finances and major governing policies**

➢ **University administration headed by the President**

➢ **Academic Senate Responsible for academic policies and regulations**

汕头大学是中国高等教育改革的试验田 "STU is the experimental farm of higher education reform"

李岚清 /2006 (Former Vice Prime Minister of China)

■**Reform Programs**

➢ **Academic Governance Reform**

➢ **Personnel and Salary Reforms**

➢ **Finance Reform**

➢ **Academic Support Reform**

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- All colleges/schools have developed or are developing their curricula according to professional standards and competency requirements
- Aiming to seek accreditation for professional programs
- Teaching methodology: interactive and student-centered inquiry-based, experiential learning and other active learning methods with emphasis on practices i.e. lab work, field work and projects
- Developing leadership, team work and communication skills

- The English Enhancement Program launched in 2002 has enhanced students' ability in use of English language

Undergraduate Education

- **Complete credit system: more flexibilities and choices for students to complete their programs**
- **Core courses are taught in small classes**
- **All students have professors as their "mentors" to enhance students advising**

- **Exchange programs with other institutions (Whitman, Melbourne, UC Berkeley, Waseda, Cambridge, etc.)**
- **Students in international arena (e.g., Semester at Sea, Pearl River Delta Forum, University Student Leadership Forum, Law student interns in HK legislative and judicial departments, etc.)**

Undergraduate Education

Cheung Kong School of Arts and Design

- Completely redesigned curriculum based on the best programs in the world;
- Implemented student-centred, multi-media, multi-culture, interactive teaching methods；
- Bilingual teaching；Systematic experiential learning paradigm；
- Quality teaching and learning monitoring system (quality teaching survey, student course evaluation, peer course evaluation, student mentor, and Dean's meeting

Maya Lin，The famous sculptor and architect，visited STU and gave a presentation

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Cheung Kong School of Journalism and Communication

➢ **Established in 2002 with three programs: Print Journalisms, Broadcast Journalism, Editing and Publication**；

➢ **High level of international academic activities recognized in the field (e.g. Peter Arnett teaching in the school)**；

➢ **Students recognized in the fields (two students worked on the documentary recently awarded Oscar)**；

➢ **Recognized as one of top Journalism schools in China**

Two graduates participated in the production of the documentary film The Blood of Yingzhou District which won 2006 Academy Award for Best Documentary Film

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Law School

- ➤ **Internationalized programs through courses and specializations；**
- ➤ **Common Law, Civil Law and Japan Law ；**
- ➤ **Courses taught in bilingual or in English and Japanese；**
- ➤ **Alternative Dispute Resolution (ADR) has been accredited by International Arbitration Centre based in Hong Kong**
- ➤ **Five students were invited as the sole contingent of China to attend the 2nd International Commercial Mediation Competition held by International Chamber of Commerce (ICC) in Paris**

At "ADR" and "Live" show teaching scene

![Shantou University logo / 汕頭大學 SHANTOU UNIVERSITY]

Undergraduate Education

School of Business

➢ Redesigned programs according to international business education with core and elective courses；

➢ Adopted English textbooks and bilingual teaching；

➢ Business Administration program recognized as Model Discipline by the Province

Business School students giving novel opinions in AIA international accountants financial case study competition

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College of Engineering

➤ Developed completely engineering curricula for five programs, namely EIP-CDIO (Ethics, Integrity and Professionalism – Conceive, Design, Implement and Operate) to enhance students' ability and skills in creative problem solving, independent learning, team work, leadership and communication；

➤ In the last five years, a total of 78 student projects received national and provincial awards through various competitions；

➤ Developed workspace (labs) and create a Student CDIO Innovation Centre；

➤ Two disciplines recognized as Model Program and Experiential Learning Demonstration Site by GD Department of Education

Academician Yang, visiting the Student CDIO Innovation Centre.

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College of Liberal Arts

➢ Redesigned curricula with new specializations；
➢ Transformed English program from traditional use of English to English Language and Literature；
➢ 22% and 38% higher than the National Average of passing Grades 4 and 8 of English Language Tests commissioned by Ministry of Education: Ranked No. 2 in passing Grade 8 test
➢ Students received New Century Overseas Youth Chinese Literature Award and other international and national awards

College of Science

➢ Reform curricula and offered in modules；
➢ Established quality management system with 16 regulations for courses, teaching affairs, student records, graduation theses, academic staff, and so on；
➢ Upgrading teaching laboratories

Professor Emeritus Yuh Kang Pan，an international authority on quantum chemistry from Boston College in the U.S.，delivering courses to the college's undergraduates

- **Shantou University commits to original research and innovation**

  - **Formulating policies to stimulate research culture**
  - **Building competitive research teams in key disciplines**
  - **Putting emphasis on impact of research programs**
  - **Generating synergies among research, teaching, and service to the local community**
  - **Developing sustainable research infrastructure**
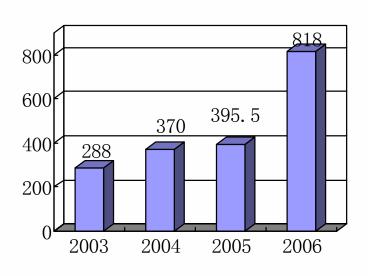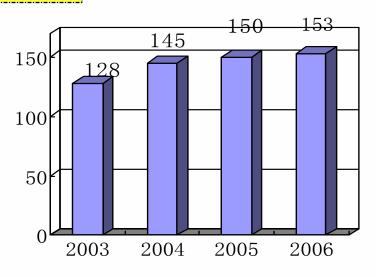

汕头大学与大立模具厂签约

汕大与香港多家公司企业签约

Competitive Grants from Granting Agencies

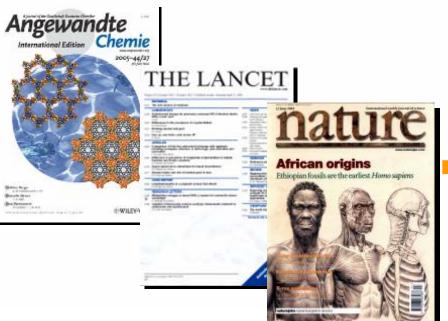| Granting Agency	Grant No/Funding
National Science Foundation (China)	31/8,180, 000 RMB
Guangdong Science Foundation	29/1,530, 000 RMB
Guangdong S&T Program	29/2,430,000 RMB

National Science Foundation

- 2003: 288
- 2004: 370
- 2005: 395.5
- 2006: 818

Guangdong Sciencce Foundation
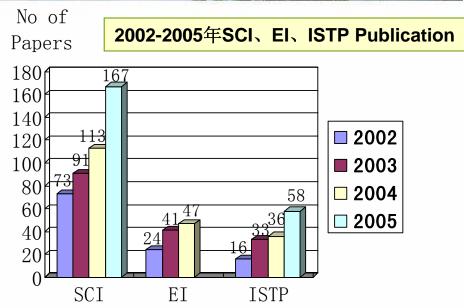
- 2003: 128
- 2004: 145
- 2005: 150
- 2006: 153

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- **Encourage faculty members to conduct original research and innovation which can benefit society**
- **Average impact factor of SCI papers published has been increased from 0.8 in 2004 to 1.2 in 2005**

No of Papers

2002-2005年SCI、EI、ISTP Publication

Chart data (No of Papers):

	2002	2003	2004	2005
SCI	73	91	113	167
EI	24	41	47	
ISTP	16	33	36	58

- **Since 2003, research in Medicine has appeared in Nature every year**

Angewandte Chemie
International Edition

THE LANCET

nature
African origins
Ethiopian fossils are the earliest *Homo sapiens*

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- In 2006，one of STU project supported by NSF China won a second prize in the 7th Royan International Research, making STU the first University to receive the Royan award in Mainland, China.

- "Genesis of a highly pathogenic and potentially pandemic H5N1 influenza virus in east Asia" published in Nature in July 2004

- "H5N1 virus outbreak in migratory waterfowl" published in Nature in 2005.

- STU/HKU Joint Influenza Research Center, endorsed by WHO, set up in 2001

- Scientists concentrated on surveillance of flu virus in seven provinces in southern China

- Publications in prestigious medical journals: "Nature", "The Lancet", "PNAS"

- Construction of an international standard bio-safety level 3 lab

Serving the Community

- **Joint research and development projects through research contracts, graduate and undergraduate thesis projects**
- **Assist local industries and government to setup innovation centres and technology bases**
- **Provide consulting services and training**

■Established: May 1998 by the Li Ka Shing Foundation.

■Objectives: to provide various free medical services to rural residents.

　■By June 2007, 916 medical teams have been sent to rural areas, and more than 350,000 patients have benefited from this project. 11,485 free operations have been performed.

　■1 million eye surgeries for people to regain sights

　■Artificial limbs for 170,000 poor disabled young people returning to the society.

- **Mr. Li Ka-Shing believes that cancer patients should be in peace and with dignity in the final stage of their lives**
- **Established in November 1998 (China's first hospice unit founded in the First Affiliated Hospital of Shantou University)**
- **20 units in 2001 in China with funding of RMB 25 million per year**

- **Service scope:**
  - **offering pain alleviation, nursing care, and psychological support for the patient and family**
  - **free hospice care for impoverished cancer patients at home**

- **As of June 2007, a total of 58,927 cancer patients have benefited from the program.**
- **Over 2,500 volunteers have been involved in this service**

- **Goal: Skills**
- **"Teaching them how to fish instead of giving them the fish"**

- **A new model for medical relief in rural village: basic equipment donation and skill transfer via specialist training provided by SUMC**
- **From December 2004 – June 2007:**
  - **Set up 6 Charity Eye Units in rural hospitals**
  - **Offered 5,107 cataract operations**
  - **Served 30,350 patients with eye conditions**
- **Ophthalmological disease treated by the Shantou University – Chinese University of Hong Kong Joint Eye Center**

- In Nov 2006, Ministry of Education conducted a university wide undergraduate education assessment and STU received "Excellence" rating.

- In 2007, Science Net ranked STU the 53th of the top 100 Chinese Universities in competitiveness and innovation in science and technology（ www.sciencenet.cn ）, an official website launched by the China Natural Sciences, China engineering Academy, Sciences Foundation of China . STU was also ranked 88th, 43th, and 16th in terms of R&D, input, output, and efficiency.

- **Established Civil Engineering, Computer Sciences and Electronics Engineering in 1985, Mechatronic Engineering in 1991 and College of Engineering with these four Departments in 1993.**
- **Five undergraduate programs in Mechanical Design, Manufacturing and Automation; Electronic and Information Engineering; Communication Engineering; Computer Sciences and Civil Engineering.**
- **Offer M.Sc programs in above areas and PhD in Civil Engineering**
- **Have over 110 faculty and staff, 1,400 undergraduates, 245 M.Sc and 7 PhD students**
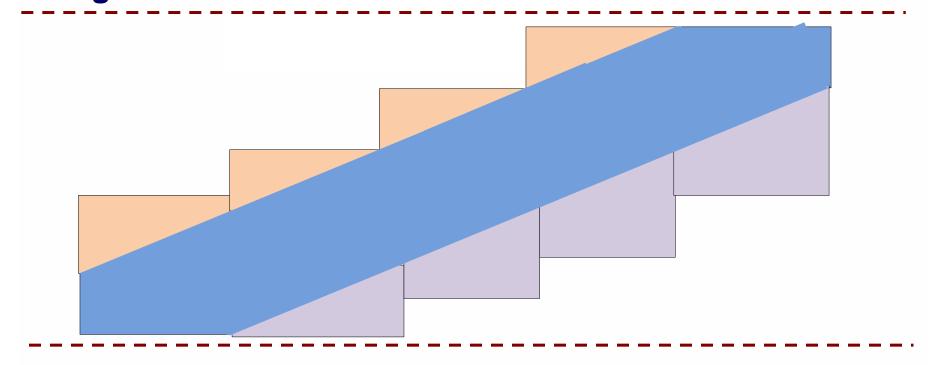
Introduction of CDIO to Faculty

- All faculty started studying CDIO initiative from Nov 2005
- CDIO seminars during Mar – May 2006
- Champion faculty developed CDIO implementation road map

Curricular Reform: Design-Directed CDIO Framework

- Design is the essence of engineering practice. Functionality, technology, economy, social, environmental and historical requirements and constraints are reflected in design process
- Integrate learning through designing process
- Overcome difficulties in "I" and "O" through selective operations and evaluations

Design-directed EIP-CDIO model

Integrate all competencies using design projects

Technology

Design-Directed EIP-CDIO

- Each program planned a set of CDIO projects to lead the students competency development
- Three level projects: Level 1 projects cover most core technical competencies (open-ended); level 2 projects lead a group of core courses; Level 3 projects are embedded in individual courses
- At least 2 Level 1 projects, a cornerstone project and a capstone project 3-5 Level 2 projects to integrate core courses
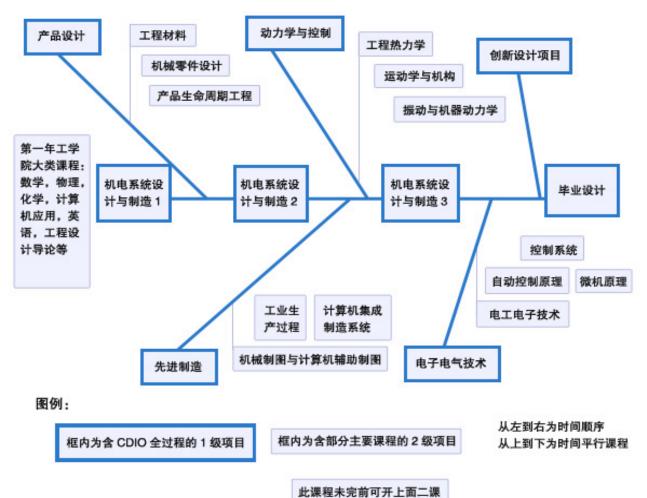
- Enhanced maths and analytical skills. Added chemistry and consolidated physics
- Added more hands-on experiments into theoretical teaching
- Added "Mechatronic system design I" , "Mechatronic system design II" and "Mechatronic system design III" during 2nd and 3rd year to integrate technical knowledge, hands on skills, design competency, creative thinking, team work and system competencies.
- All projects are team-based projects to enhance team spirit
- Added Design-Build projects, and real world product development
- Required students to conduct pre-class self study to cultivate active learning and lifelong learning skills

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- A fishbone illustration of the Mechatronics curriculum plan

机械电子工程专业核心课程培养结构示意图

产品设计

工程材料

机械零件设计

产品生命周期工程

动力学与控制

工程热力学

运动学与机构

振动与机器动力学

创新设计项目

第一年工学院大类课程：数学，物理，化学，计算机应用，英语，工程设计导论等

机电系统设计与制造1

机电系统设计与制造2

机电系统设计与制造3

毕业设计

控制系统

自动控制原理

微机原理

电工电子技术

工业生产过程

计算机集成制造系统

机械制图与计算机辅助制图

先进制造

电子电气技术

图例：

框内为含 CDIO 全过程的 1 级项目

框内为含部分主要课程的 2 级项目

从左到右为时间顺序
从上到下为时间平行课程

此课程未完前可开上面二课

All projects are team projects. The students develop team spirit, practical application, solution exploration, project management and CDIO system competencies

Core theoretical knowledge is taught. But operational competencies like project management, decision making, report writing, oral presentation, information gathering, etc are developed through proper guidance, requirements and processes.

■ Level 1 project

➢ Year 2 and year 4
➢ 4-6 students/group. Students develop projects, eg the stair-climber, starting from functional requirements to product implementing, evaluation and improving.
➢ Cultivate design, innovative, coordinating, communicating and leading competencies. Enhancing students' self esteem.
➢ CDIO projects allow theoretical knowledge to link and practical application.

■ Level 2 project

➢ Level 2 projects integrate groups of inter-related core courses i.e. design, manufacture, control, instrumentation
➢ Students have full scope views of the theories
➢ Reduce unnecessary repetitive teaching. Reduce classroom hours

■ Level 3 project (in-course project)

➢ Embedded in individual courses
➢ Build up students' competencies
➢ Facilitate the students learning
➢ Interactive, active, exploring, problem solving

Design-Directed EIP-CDIO New Workspace

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- The College houses 40 labs for undergraduate teaching
- Workspace 11000m^2
- Invested RMB11million for workspace improvement and lab equipment
- Setup a 600m^2CDIO Innovation Center，which is a common platform for all students of the College

金工实习基地

微机原理实验室

公差实验室

通信实验室

CDIO创新实践中心

传动与控制实验室

机械加工实验室

电路实验室

测试技术实验室

机器人实验室

柔性制造系统实验室（FMS）

工程材料实验室

- Revising curricula; improving course structure; updating contents; adopting new teaching/instruction methods.
- Piloted 34 courses
- Has implemented EIP-CDIO curricula in all programs since September 2006

CDIO seminar

Pilot course seminar

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Rules and regulations to enforce the working procedures

Classroom sitting-in observations among all faculty and management; quality control pannel

约束机制

监督机制

教学质量
监控体系

激励机制

反馈机制

Incentive measurements: awards, annual assessments, promotions, students' feedbacks

Evaluate and discuss faculty, management and student feedback, reflections to improve teaching

Summary and Future Perspective

- STU is a young dynamic university with proven track-records
- Committed to higher education reform and quality education
- Continue to explore future university mission through academic reform and innovation
- Academic Plan of 2006-2011" to make STU an internationalized, university with distinctive features

Catalyst for Constructive Changes
in Chinese Higher Education

"Education reform of Shantou University is a valuable reference for other Chinese Universities."
– Accreditation Expert Panel
Ministry of Education, Nov, 2006

" Education is the cornerstone of tradition and progression, of dignity and our tools to reshape destiny. This is what education promises."
- Dr. Li Ka-Shing

Thank you!