THIS IS

HKUST

THE HONG KONG UNIVERSITY OF
SCIENCE AND TECHNOLOGY
The Hong Kong University of Science and Technology, opened in 1991, is educating today's men and women with the skills they will need to contribute to the economic and social development of Hong Kong and its region. With an internationally distinguished faculty and a modern campus housing state-of-the-art teaching and research facilities, HKUST in just a few short years is well on its way to becoming the premier technological institution in the region. In time, it will surely rank among the eminent research universities of the world.
Located at the geographical heart of Asia, Hong Kong is justly famed as one of the unique and special places in the world.

A vibrant modern city of six million people, Hong Kong has no natural resources to speak of other than its superb harbour. Yet it is the world’s third largest financial centre and tenth largest trading partner. It is home to more than 700 banks and international corporations.

While Hong Kong’s return to Chinese sovereignty in 1997 has captured the world’s attention, a more far-reaching transition has already begun. With labour-intensive factory-floor manufacturing relocating elsewhere, Hong Kong’s economy is shifting towards upstream industrial activities as well as sophisticated products and services.

Hong Kong is also beginning to create a capacity for technological innovation that will be needed for continued economic growth in the 21st century.

Hong Kong’s commitment to its future can be seen in a host of new initiatives and ventures. But nowhere is this commitment more evident than in its bold creation of a world-class university dedicated to science, engineering, and management.
THE story of the Hong Kong University of Science and Technology begins with the late Sir Edward Youde, Governor of Hong Kong from 1982 to 1986, Sir S. Y. Chung, and the people of Hong Kong who foresaw the need in the territory for an educational institution to lead the way in the areas of science and technology vital to the region’s economic future.

In March 1986, the Hong Kong Government set in motion an order to establish a committee to work out in detail the creation of a new university. In September of that year, the new university’s Planning Committee held its first meeting, with Sir S. Y. Chung as Chairman.

In October 1986, the Royal Hong Kong Jockey Club presented to the Government a dramatic proposal to help fund the university’s construction cost with a donation of HK$1.6 billion (later increased to HK$1.926 billion, in addition to a Government allocation of HK$1.622 billion). The Jockey Club’s offer and its willingness to manage the entire construction project made it possible to trim three years off the projected timetable—the new university would open in 1991 rather than 1994, and would enrol 7,000 students by 1996.

With the formal incorporation of the Hong Kong University of Science and Technology on 10 April 1988, the University Council came into being. Sir S. Y. Chung was appointed its first Chairman. Sir David Wilson, Youde’s successor as Governor and Chancellor of Hong Kong’s two other universities, became HKUST’s Chancellor as well.

The University’s founding chief executive, Professor Chia-Wei Woo, had been designated Vice-Chancellor and President in November 1987 while serving as President of San Francisco State University. A physicist, and the first person of Chinese descent ever appointed to head a major American university, Professor Woo returned to Hong Kong and took up his new position in September 1988.

As academic planning accelerated, growth projections and staff requirements were progressively refined. Preliminary models for schools and departments were drawn up with the voluntary assistance of a network of distinguished academics in North America, and plans for the University’s administrative organisation, central facilities, and support services were developed.
Meanwhile, architectural and engineering consultants commissioned by the Jockey Club had been at work on the physical plans and site formation for the University campus. In November 1989 the first contract was let to commence the building of the campus on a spectacular 60-hectare site on the waterfront of one of Hong Kong's most attractive residential areas.

Situated on a steep slope beside the shore, the campus grounds were terraced to afford buildings on all levels with unobstructed panoramic views of the sea. The main academic complex itself was to be located on the highest level of the slope, with student residential halls and outdoor sports facilities placed close to the water and the natural marina.

Without exception, the contractors and consultants said it was the fastest construction project they had ever worked on. In order for the University to open on 2 October 1991, a scheme of “fast track” construction had been adopted, mandating that design and construction proceed concurrently, with design keeping only one step ahead. The master plan further mandated that the University be built in three phases, with the first two phases constituting a core campus accommodating 7,000 students, and the final phase providing a future expansion of capacity to 10,000 students.

Phase I of the campus was handed over to the University in August 1991, barely in time to be outfitted for HKUST's first student intake—a feat deemed “little short of miraculous” by knowledgeable observers.

The opening of the University was celebrated on 10 October 1991. Pride at what had been accomplished in so short a time, together with bright hopes for the future, was the order of the day. Only five years had elapsed since the first meeting of the Planning Committee. In another five years the University would be in full stride with well-established teaching and research programmes, an enrolment of 7,000, and a faculty of 640.
The speed with which the campus was constructed and the rapid
growth of the University during its first years are one of the
most striking aspects of the creation of HKUST. Only in Hong
Kong, it is said, could this take place. Yet speed alone has never been
the aim. The real achievement of the University is to be found in the
excellence of its faculty, the quality of its facilities, and the perfor-
man ce of its students.

Visitors to HKUST are often overwhelmed by the beauty of
the architecture in its natural surroundings. But beyond this first
impression, the campus reveals itself to be truly functional. Carefully
planned facilities such as

- a well-stocked library built on the latest information
technology
- a high-speed fibre-optic network linking computing re-
sources in all parts of the campus and reaching out to all
corners of the world
- teaching and research laboratories equipped with state-of-
the-art instrumentation and devices

create an environment for learning that is quite unique in the
region.

As a result, admission to HKUST is highly sought. For its first
intake of students in 1991, the University had more than 10,000
applicants for 500 undergraduate places. It selected—and
continues to seek—highly qualified men and women who have
inquiring minds, broad interests, and leadership abilities. The
University's goal is to engage them in a continuous dialogue and to
help them become versatile, innovative, and caring citizens of
society.
For its faculty, HKUST has mounted an extensive international recruitment campaign. Tapping the resources of a worldwide network of advisors, the University has succeeded in assembling an exceptionally able and distinguished group of scholars—pioneers drawn to the challenge of building a new university from the ground up.

Beginning with a founding faculty of 100, the University continues to add new faculty members at a steady rate as student enrolment climbs toward its current target of 7,000. This recruitment campaign will result in more than 10 new appointments per month at least through 1996.

Today, every faculty member at HKUST at the rank of Lecturer/Assistant Professor or higher holds a doctoral degree from an established university. Some 60% of the faculty hold doctorates from the following institutions:

- Caltech
- Cambridge
- Carnegie Mellon
- Chicago
- Columbia
- Cornell
- Harvard
- Illinois

- London
- Michigan
- Minnesota
- MIT
- Northwestern
- Oxford
- Princeton
- Purdue

- Stanford
- Toronto
- UBC
- UC Berkeley
- UCLA
- USC
- Washington
- Yale
The Hong Kong University of Science and Technology consists of four schools:

- School of Science
- School of Engineering
- School of Business and Management
- School of Humanities and Social Science

The Schools of Science, Engineering, and Business and Management provide first degrees and graduate programmes through to the doctorate. The School of Humanities and Social Science provides general education for all undergraduates and enrols graduate students up to the doctoral level.

The undergraduate curriculum is founded on a credit-based system, striking a compromise between the sharp focus prevalent in traditional Chinese and British universities and the broad approach characteristic of American universities. To ensure overall breadth, undergraduates are required to take one-third of their credits outside their major department, including 12% of their courses in the School of Humanities and Social Science.

At HKUST, the practice of "continuous assessment" in teaching utilises homework, periodic tests, and classroom discussion to ensure that students make sustained progress in learning and self-expression.

The language of instruction is English.
### Undergraduate Degrees

<table>
<thead>
<tr>
<th>School of Science</th>
<th>Undergraduate Degrees</th>
<th>Graduate Degrees</th>
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<tbody>
<tr>
<td>Biochemistry</td>
<td>BSc</td>
<td>MPhil, PhD</td>
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<tr>
<td>Biology</td>
<td>BSc</td>
<td>MPhil, PhD</td>
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<tr>
<td>Chemistry</td>
<td>BSc</td>
<td>MPhil, PhD</td>
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<tr>
<td>Mathematics</td>
<td>BSc</td>
<td>MSc, MPhil, PhD</td>
</tr>
<tr>
<td>Physics</td>
<td>BSc</td>
<td>MSc, MPhil, PhD</td>
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<tr>
<td>Biotechnology*</td>
<td></td>
<td>MSc</td>
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<tr>
<td>Materials Science and Engineering*</td>
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<td>MSc</td>
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<tr>
<td><strong>School of Engineering</strong></td>
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<tr>
<td>Chemical Engineering</td>
<td>BEng</td>
<td>MSc, MPhil, PhD</td>
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<tr>
<td>Civil &amp; Structural Engineering</td>
<td>BEng</td>
<td>MSc, MPhil, PhD</td>
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<tr>
<td>Computer Science</td>
<td>BEng</td>
<td>MSc, MPhil, PhD</td>
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<tr>
<td>Electrical &amp; Electronic Engineering</td>
<td>BEng</td>
<td>MSc, MPhil, PhD</td>
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<tr>
<td>Industrial Engineering</td>
<td>BEng</td>
<td>MSc, MPhil, PhD</td>
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<tr>
<td>Mechanical Engineering</td>
<td>BEng</td>
<td>MSc, MPhil, PhD</td>
</tr>
<tr>
<td>Computer Engineering*</td>
<td>BEng</td>
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<tr>
<td>Manufacturing Engineering*</td>
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<td>MSc</td>
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<tr>
<td><strong>School of Business &amp; Management</strong></td>
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<tr>
<td>Accounting</td>
<td>BBA</td>
<td>MBA, PhD</td>
</tr>
<tr>
<td>Economics</td>
<td>BBA, BSc</td>
<td>MBA, PhD</td>
</tr>
<tr>
<td>Finance</td>
<td>BBA</td>
<td>MBA, PhD</td>
</tr>
<tr>
<td>Information and Systems Management</td>
<td>BBA</td>
<td>MBA, PhD</td>
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<tr>
<td>Management of Organisations</td>
<td>BBA</td>
<td>MBA, PhD</td>
</tr>
<tr>
<td>Marketing</td>
<td>BBA</td>
<td>MBA, PhD</td>
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<tr>
<td><strong>School of Humanities &amp; Social Science</strong></td>
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<tr>
<td>Humanities</td>
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<td>MA, MPhil, PhD</td>
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<tr>
<td>Social Science</td>
<td></td>
<td>MA, MPhil</td>
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<tr>
<td>Chinese Studies*</td>
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<td>MA</td>
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*Interdisciplinary programme

Graduate programmes leading to the Master of Science (MSc), Master of Arts (MA), and Master of Business Administration (MBA) degrees are “taught degrees” in that they are based on course work, although a project report may also be required. The Master of Philosophy (MPhil) and Doctor of Philosophy (PhD) are research degrees. Graduate degrees may be earned through part-time as well as full-time study.

In addition to programmes in traditional academic disciplines, HKUST offers interdisciplinary programmes leading to degrees in Biotechnology (MSc), Computer Engineering (BEng), Manufacturing Engineering (MSc), Materials Science and Engineering (MSc) and Chinese Studies (MA).
Research is at the heart of the University's creative endeavours. A commitment to the creation of new knowledge forms an essential part of the intellectual climate at HKUST. At the same time, a dedication to service brings a commitment to mission-oriented research in areas critical to Hong Kong and the region's economy.

Research at HKUST is undertaken in many different settings—not only within departments but across departmental boundaries in specialised institutes, centres, and laboratories. These "organised research units" provide faculty and students with a wide range of opportunities to participate in interdisciplinary projects and to apply their scientific and technical knowledge to real-world problems.

Focused work in these centres of excellence will yield significant contributions to the region's economic growth, as well as attract the external support and collaboration needed to fulfil the University's mission.

In the absence of national and major corporate R&D laboratories in Hong Kong, HKUST has built its own organisation to interface with the community. The University's R&D administration is carried out by its Research and Development Branch working through the Research Centre, the Technology Transfer Centre, and the Office of Contract and Grant Administration.

Expediting technology transfer is the specific mission of the HKUST RandD Corporation Ltd, a company wholly owned by the University but managed by an independent Board of Directors dominated by business leaders. As a commercial entity, the RandD Corporation provides for exploitation of business opportunities arising from research conducted not only at HKUST but around the world in areas vital to the region's economic prosperity.
In protein design, scientists modify the folding patterns of amino acid chains to enhance protein activity.

Design of an integrated gas sensor.

Projects undertaken by HKUST’s Research Centre include a HK$187 million weather monitoring and forecasting system for Hong Kong’s new international airport. The Operational Windshear Warning System is being developed in collaboration with the U.S. National Centre for Atmospheric Research.

Satellite images of Hong Kong are a rich source of data for environmental studies.
Organised research units currently in operation at HKUST (in the order of establishment) and their areas of concentration:

**Biotechnology Research Institute**
Biomedical instrumentation and diagnostics; drug delivery and development; agricultural and environmental bioengineering; genetic engineering of biomacromolecules; biosensor development; immunology; molecular genetics of plants.

**Hongkong Telecom Institute of Information Technology**
Lightwave technology; network technology; wireless communication; video technology.

**Sino Software Research Centre**
Low-cost Internet access; Chinese-language interface support; heterogeneous database management technology; intelligent video manipulation tools; system requirements modeling.

**Advanced Materials Research Institute**
Electronic nanostructure: thin film science, semiconductor clusters, theory of materials; optical magnetic: lasers and photonics, liquid crystals, magnetic materials; synthetic composite: polymer synthesis, metals and composites, biomaterials.

**Centre for Economic Development**
Regional economic development and transition; business and industrial development in the PRC; data bank and library of relevant statistics.

**Centre for Asian Financial Markets**
Knowledge base to support analysis of financial products introduced in Asian markets; data sets and teaching materials; academic interface with government and business leaders.

**Institute for Environmental Studies**
Air pollution; marine pollution; water and wastewater treatment; sediment studies; remote sensing; wind tunnel technology; solid and liquid waste management, hazardous waste management.

**Institute for Infrastructure Development**
Full-scale structure and control tests; geotechnical centrifuge modeling; structural systems design and renewal strategies; infrastructure systems planning and management.

**Institute for Micro Systems**
Advanced microelectronic materials; micromechanical devices, sensors, and actuators; flat-panel display technology; nanotechnologies and devices; integration of circuits and systems.

**Hainan Institute**
Research, development, and services focused on China's Hainan Province: agriculture and fisheries; behavioural science; economics and finance; environment; infrastructure development; technology transfer; executive education programmes.
Central Facilities

In addition to departmental laboratories, HKUST has created a number of centralised facilities used for teaching and research by scholars from various disciplines. These facilities also invite use by researchers from other institutions and by client organisations in industry.

Two notable examples are the Materials Characterisation and Preparation Centre and the Microelectronics Fabrication Centre. Other facilities currently under design or construction include an advanced engineering materials centre, a 128-node parallel supercomputer, an environmental wind tunnel, and an ocean-colour satellite receiving station.
University Library

Occupying a central location on campus, the HKUST Library commands five floors with a spectacular view of the sea.

Much more than a repository of books and periodicals, the HKUST Library is one of the first of a new generation of electronic libraries making extensive use of the information technology that is transforming traditional library facilities.

Through the Library Online System accessible from every part of the campus, users can search the Library's catalogue of holdings in both English and Chinese. Also available for perusing are the catalogues of other tertiary institutions in Hong Kong, as well as numerous library catalogues and databases overseas.

As of 1994, three years after the University's opening, the Library's collection consisted of 300,000 volumes, 3,000 journal subscriptions, and 2,900 journals in full-text electronic format. In addition, 40 databases on CD-ROM ranging from scientific and technical dictionaries to PC-SIG and Shakespeare could be consulted over the campus network. Another 42 databases were available for use in the Library, including 5 full-text image databases, stored on 1,646 discs. With continual acquisitions, the Library's collection is expanding at an explosive pace.

Centre of Computing Services and Telecommunications

HKUST's computing environment, developed and managed by the Centre of Computing Services and Telecommunications, fully supports the teaching, research, and administrative activities of the campus.

Modeled on a distributed client-server architecture, the computing environment is distinguished by an advanced networking infrastructure found on few campuses. The network backbone is a collection of high-speed fibre distributed data interface (FDDI) rings, each running at 100 megabits per second. The FDDI rings are interconnected by a gigaswitch, giving an aggregate network bandwidth of 3.6 gigabits per second.

The campus network itself is connected to Harnet (the Hong Kong Academic & Research Network) via a 1.544 megabits-per-second circuit, and to the Internet via a dedicated 64 kilobits-per-
second circuit to the United States. Expansion is under way.

All campus microcomputers and scientific workstations are connected to the network. Powerful server computers provide campus-wide network services, making electronic mail and a full range of software applications available not only in offices and laboratories, but in student dormitories and staff apartments as well. In addition, a number of "computer barns" in various locations on campus provide PC, Macintosh, and Unix workstation facilities for undergraduate teaching and student use.

**Language Centre**

The Language Centre offers language courses for students and staff of the University who wish to improve their proficiency in English, Chinese, and other languages.

First-year undergraduates in need of English-language training are required to attend the Language Centre's programme of instruction. These classes provide practical language tuition with particular reference to English for academic purposes. In addition, the Language Centre offers courses designed to meet the needs of specific groups of graduate and undergraduate students, as recommended by academic departments.

The Language Centre has three 24-booth audio-visual language laboratories for use by class groups. These laboratories are augmented by a Self-Access Centre offering a growing collection of written and taped materials in a variety of Asian and other languages. The Self-Access Centre has within it an 18-booth language laboratory and full listening and viewing facilities.

The Language Centre also operates a Writing Centre where students are trained in academic and professional writing through workshops and individual tuition.

**Educational Technology Centre**

The Educational Technology Centre embodies the University’s commitment to high standards and up-to-date methods both in teaching and in the communication of research results.

The Centre provides a comprehensive service for all academic and research staff. It maintains a wide range of resources related to instructional media and assists academic staff in producing various teaching and learning materials, including slide presentations, overhead transparencies, video tapes, and printed materials. In addition, the Centre provides high-speed, high-volume reprographic and offset printing services.

The Centre also serves as a resource for information on teaching methods, instructional formats, and materials related to research on teaching. It organises seminars and workshops on topics such as selection and use of mediated instructional materials, production of teaching and learning packages, and methods of soliciting student feedback on teaching effectiveness.
Incoming students are introduced to the University during a busy Orientation week organised by the numerous student societies on campus.

An exhibition sponsored by the Students' Photographic Society — one of the many events that fill the year's calendar.

This multipurpose field is used for baseball and hockey in addition to its primary use as a soccer pitch.

The University's swimming pool remains open to students and staff from April through December.
FACTS & FIGURES

Enrolment • 4,361 undergraduate and 886 graduate students in 1994-95.
• 7,000 (full-time equivalent) students by 1996-97.

Financial assistance • Corporate and foundation support for merit scholarships and student loans reached HK$10.51 million in 1994-95.
• Virtually all full-time research graduate students are supported.

Faculty • 383 in August 1994; 640 by 1996-97.
• 32% grew up in Hong Kong, 23% on the Chinese Mainland, 12% in Taiwan.
• 66% of the faculty hold doctorates from the following institutions:

| Caltech | London | Stanford |
| Cambridge | Michigan | Toronto |
| Carnegie Mellon | Minnesota | UBC |
| Chicago | MIT | UC Berkeley |
| Columbia | Northwestern | UCLA |
| Cornell | Oxford | USC |
| Harvard | Princeton | Washington |
| Illinois | Purdue | Yale |

Research • Interdisciplinary research at HKUST focuses on:

- Advanced materials
- Asian financial markets
- Biotechnology
- Economic development
- Environmental studies
- Ha Lan
- Information technology
- Infrastructure development
- Manufacturing
- Micro systems
- Scientific computation
- Software engineering

• Grants and contracts totaling HK$80.6 million were awarded to HKUST in 1993-94, the third year of the University's operation, rising to more than HK$100 million in 1994-95. HKUST's success rate in competition for grants from Hong Kong's Research Grants Council is 60-70%.

Campus • 60 hectares, located on the scenic Clear Water Bay peninsula in East Kowloon, about 20 minutes from Kai Tak International Airport and the city centre.
• Student accommodation: 1,722 places in undergraduate residence halls; 356 in graduate residence halls. More student housing will be built.
• Staff apartments: 158 for research and support staff; 182 for senior staff, plus 66 under construction and 156 under planning.
Objective of the University

To advance learning and knowledge through teaching and research, particularly in science, technology, engineering, management and business studies; and at the postgraduate level.

To assist in the economic and social development of Hong Kong.

— University Ordinance