

HIGHER EDUCATION AND SKILLS TRAINING

Source of Data

Statistics on graduates from the institutions of higher learning in Singapore are provided by the National University of Singapore, Nanyang Technological University (including National Institute of Education), Singapore Management University, Singapore Institute of Management, Singapore Polytechnic, Ngee Ann Polytechnic, Temasek Polytechnic, Nanyang Polytechnic and Republic Polytechnic.

Statistics on persons who completed or participated in the vocational or professional skills training courses are provided by the Institute of Technical Education, Singapore Workforce Development Agency, Building and Construction Authority Academy, Ong Teng Cheong Labour Leadership Institute, Institute of Systems Science (National University of Singapore) and Singapore Human Resources Institute.

The **National University of Singapore** (NUS) was established in August 1980 with the merger of the University of Singapore (founded in 1962) and Nanyang University (founded in 1955).

NUS has 14 faculties, namely:

- Faculty of Arts and Social Sciences;
- Faculty of Dentistry;
- Faculty of Engineering;
- Faculty of Law;
- Faculty of Science;
- School of Computing;
- School of Design and Environment;
- Duke-NUS Graduate Medical School Singapore;
- NUS Business School;
- NUS Graduate School of Integrative Sciences and Engineering;
- Lee Kuan Yew School of Public Policy;
- University Scholars Programme;
- Yong Loo Lin School of Medicine; and
- Yong Siew Toh Conservatory of Music.

The NUS Graduate School for Integrative Sciences and Engineering, Lee Kuan Yew School of Public Policy and Duke-NUS Graduate Medical School Singapore offer higher degree courses only.

There is also a teaching institute known as the Institute of Systems Science.

NUS has also established specialist research institutes and centres to promote research and advanced training in areas of strategic importance to the nation's development such as translational medicine, nanoscience and

nanotechnology, quantum information and technology, environment and water technology, interactive and digital media, maritime research and transportation, logistics and supply chain management, and defence-related research.

The **Nanyang Technological University** (NTU) is a research-intensive university with globally acknowledged strengths in science and engineering. The University has roots that go back to 1955 when Nanyang University was set up. In 1981, Nanyang Technological Institute (NTI) was established on the premises of the former Nanyang University. In 1991, NTI was inaugurated as NTU with the absorption of the National Institute of Education. The alumni rolls of the former Nanyang University were transferred to NTU in 1996.

The University is organised into 4 colleges with 12 schools, and 3 autonomous entities as follows:

Colleges

College of Engineering:

- School of Chemical and Biomedical Engineering;
- School of Civil and Environmental Engineering;
- School of Computer Engineering;
- School of Electrical and Electronic Engineering;

- School of Materials Science and Engineering; and
- School of Mechanical and Aerospace Engineering.

College of Business

- Nanyang Business School

College of Science:

- School of Biological Sciences; and
- School of Physical and Mathematical Sciences.

College of Humanities, Arts & Social Sciences:

- School of Art, Design and Media;
- School of Humanities and Social Sciences; and
- Wee Kim Wee School of Communication and Information.

Autonomous entities

- National Institute of Education (NIE);
- S Rajaratnam School of International Studies; and
- Earth Observatory of Singapore.

The schools offer undergraduate programmes as well as a range of graduate programmes leading to the degrees of Master, Doctor of Philosophy and graduate diplomas.

To facilitate multi-disciplinary research and advanced training, NTU has set up the Earth Observatory of Singapore, Singapore Centre on Environmental Life

Sciences Engineering, Nanyang Environment and Water Research Institute, Energy Research Institute at NTU, Institute for Media Innovation, Nanyang Centre for Public Administration, Institute of Catastrophe Risk Management, Institute of Sustainable and Applied Infodynamics, Nanyang Institute for Engineering in Medicine, and a structural genomics laboratory. NTU has also started a life sciences graduate school at its one-north campus since January 2009.

The **Singapore Management University** (SMU) incorporated in 2000, is Singapore's third university. The University is known for its American-style pedagogy which uses the MBA approach to teaching undergraduates in small seminar-style classes.

SMU comprises 6 schools, namely:

- Lee Kong Chian School of Business;
- School of Accountancy;
- School of Economics;
- School of Information Systems;
- School of Law; and
- School of Social Sciences.

SMU has a wide postgraduate offering and focuses on producing multi-disciplinary, industry-relevant faculty research. SMU houses the Wharton-SMU Research Centre, many research institutes and centres in close collaboration with industry partners. Public and customised

programmes are available through SMU's Executive and Professional Education arm.

The **Singapore Institute of Management** (SIM Group) was founded in 1964 as a membership society under the Economic Development Board and today, has over 33,000 corporate and individual members. The SIM Group's core services include the following:

- SIM University (UniSIM) is the first privately-funded local university approved by the Ministry of Education to issue university degrees. UniSIM's 4 schools offer more than 50 academic programmes in various disciplines. Its current enrolment is close to 11,000 students.
- SIM Global Education offers overseas degree programmes through its partnerships with established international universities and institutions from the US, UK, Australia and Switzerland. With an enrolment of over 19,500, SIM Global Education offers more than 60 full-time and part-time academic programmes at postgraduate, undergraduate, diploma and certificate levels.
- SIM Professional Development trains more than 11,000 professionals

annually through its 600 seminars, workshops and conferences.

The **Singapore Polytechnic** (SP), founded on 27 October 1954, is the first polytechnic to be established in Singapore.

SP offers full-time and part-time studies leading to diploma, advanced diploma, specialist diploma and other post-diploma qualifications in various fields, including Applied Arts, Aerospace, Architecture & Built Environment, Business & Finance, Chemical & Life Sciences, Communication, Design, Digital Media, Infocomm Technology, Engineering, Health & Nutrition, Management, Maritime, Optometry and Social Sciences.

In FY 2009, the Polytechnic offered a range of 46 full-time courses at diploma level.

In addition, advanced diploma and specialist diploma courses are also available for polytechnic graduates and working professionals to upgrade themselves.

The **Ngee Ann Polytechnic** (Ngee Ann) assumed its name in April 1982. It was initially established as a private institution in 1963 under the name of Ngee Ann College. It became a public

institution and was renamed Ngee Ann Technical College in 1968.

The Polytechnic offers 46 full-time diploma courses, 12 part-time diploma courses, 2 advanced diploma courses and 6 specialist diploma courses.

In 2009, a total of 29 runs of 23 short courses and 38 runs of 16 Workforce Skills Qualification System (WSQ) courses were conducted through the Polytechnic's Continuing Education and Training (CET) Academy. These courses were aimed at upgrading the skills and knowledge of the general workforce. In addition, Ngee Ann conducted 32 runs of 22 customised in-company training programmes based on the specific training needs of the organisations concerned.

The **Temasek Polytechnic** (TP) was established on 6 April 1990. It is organised into 7 schools, namely Applied Science, Business, Design, Engineering, Humanities & Social Sciences, Informatics & IT, and Tourism Academy at Sentosa. They offered a total of 51 diploma courses in 2009. TP also conducts part-time courses for working adults.

The **Nanyang Polytechnic** (NYP) was established in 1992 to provide quality education and training opportunities for

school leavers. The Polytechnic currently has 7 schools offering a wide range of courses in Business Management, Chemical & Life Sciences, Design, Engineering, Health Sciences, Information Technology, and Interactive & Digital Media.

NYP offers a host of full-time diploma courses for pre-employment training and various continuing education courses at advanced diploma, specialist diploma and certificate course levels.

The **Republic Polytechnic** (RP) was established on 1 August 2002. It has 6 schools and 1 centre offering 30 diploma courses in Information and Communications Technology, Engineering, Applied Science, Technology for the Arts, Sports, Health & Leisure, Hotel & Hospitality, and Culture & Communication. RP seeks to nurture innovation and entrepreneurial learning in an environment that develops problem-solving process skills and a life-long learning attitude.

The **Institute of Technical Education** (ITE) was established on 1 April 1992 as a post-secondary institution which provides pre-employment training for secondary school leavers and Continuing Education and Training (CET) for adult learners.

ITE offers full-time training and traineeship programmes to school leavers, and skills training and academic education programmes to adult learners. Employees can also undergo On-the-Job Training in companies which are Certified On-the-Job Training Centres. In addition, ITE conducts skills evaluation tests for public candidates and instructional skills and related programmes for industry trainers.

Full-time training is offered to secondary school leavers with the GCE 'O' and 'N' qualifications in Engineering, Business & Services, Design & Media, Infocommunications Technology, and Applied & Health Sciences. The full-time courses lead to the award of the Higher National ITE Certificate (*Higher Nitec*) and National ITE Certificate (*Nitec*).

Traineeship is an 'earn-as-you-learn' scheme for secondary school leavers. It has 2 training components, namely On-the-Job Training (OJT) and Off-the-Job Training (Off-JT). OJT is conducted by the sponsoring companies on their premises. Off-JT could be provided by ITE, industry training centres or companies certified by ITE as Approved Training Centres.

Adult learners may choose from a range of *Master Nitec*, *Higher Nitec*, *Nitec* and ITE Skills Certificate (ISC) courses to upgrade their skills. All these programmes

are offered in modules, giving adults the flexibility to sign up for training based on their needs.

For adult learners who wish to upgrade themselves academically, an option offered by ITE is the part-time General Education Programme from Secondary One Normal to GCE 'N' and GCE 'O', which provides adult learners the opportunity to acquire academic qualifications which are otherwise obtained through the formal school system.

The Basic Education for Skills Training (BEST) Programme and the Worker Improvement through Secondary Education (WISE) Programme were phased out in December 2008 and February 2009 respectively.

The **Singapore Workforce Development Agency** (WDA) enhances the competitiveness and employability of workers by helping them acquire skills to adapt to a changing economy.

To achieve this, WDA works with various industry leaders, labour unions, employers, economic agencies, professional associations and training organisations.

WDA also supports the growth of Singapore industries by building a pipeline

of competent workers through the constant upgrading of workers' skills and raising industrial performance standard.

The Singapore Workforce Skills Qualifications System (WSQ) launched in October 2005, opens up avenues for adult workers to obtain nationally recognised and industry-relevant qualifications. The WSQ emphasises flexible competency-based adult learning, open access to skills upgrading and clear career progression pathways for workers to upgrade.

The WSQ is anchored on the development of skills and competencies linked to occupational structures, in close consultation with industries. Under the WSQ, competency standards, assessment strategies and training curriculum incorporating adult learning principles, are established for each key industry.

In 2009, WDA developed another 2 WSQ frameworks in Wafer Fabrication and Textile & Fashion Technology. WDA has shifted its focus towards implementing and promoting adoption of the frameworks. Together with earlier frameworks rolled out since 2005, WDA has to-date developed over 24 WSQ frameworks covering all the key sectors of the economy.

In addition, WDA has established nearly 50 CET centres to provide skills training for various sectors such as

aerospace, tourism, security and new areas like the creative industries.

WDA introduced the Professionals Conversion Programme (PCP) in April 2007 to help professionals, managers, executives and technicians (PMETs) convert and upgrade their skills and make career switches in sectors, such as precision engineering, aerospace, healthcare, community & social services and training. As at December 2009, PCP had assisted about 2,200 trainees who had successfully completed training or who are undergoing training since the start of the PCP.

Since January 2009, the National Trades Union Congress (NTUC) has consolidated its CET efforts including the Job Re-creation Programme (JRP), career assistance and placement, and the implementation of WDA programmes such as Skills Programme for Upgrading and Resilience, etc under its Employment and Employability Institute (e2i). In 2009, e2i assisted more than 53,000 workers in industries such as Construction, Food & Beverage, Retail, Tourism and Security.

The Skills Development Fund (SDF) was set up in 1979 through collecting the Skills Development Levy from employers. The SDF provides course fee subsidies to employers and training institutions to support the skills upgrading of Singapore's workforce. Over the years, the SDF has helped

Singapore companies develop a strong training culture and strengthened the concept of lifelong learning so that workers can keep up with the changing demands of the employment landscape.

The Lifelong Learning Endowment Fund (LLEF) was set up in March 2001, with an initial capital of \$500 million. Through further capital contributions from the Government, the capital sum of the LLEF stood at \$3.0 billion as at FY 2009¹, generating annual interest earnings of about \$120 million². WDA taps on the LLEF to fund lifelong learning initiatives, including employment facilitation for unemployed Singaporeans through its career centres operated in collaboration with the Community Development Councils; development of Singapore's Continuing Education & Training (CET) infrastructure and capability under the WSQ, and learning outreach and promotion. The LLEF complements the SDF to ensure a holistic approach to the upgrading of Singapore's workforce.

The **Building and Construction Authority** (BCA) was established in April 1999 and its mission is to shape a safe, high quality, sustainable and friendly built environment.

¹ Period from April 2009 to March 2010

² Based on 4% per annum

BCA Academy is the education and research arm of BCA. It provides quality training, learning and research programmes for the advancement of the building industry and the development of an excellent built environment. It plays a key role in ensuring that the skills and expertise required to shape a safe, high quality, sustainable, and friendly built environment are readily available. The Academy aims to serve as the national centre for the training and education of craftsmen, technical and professional personnel for the industry, and for research and development on the built environment.

The **Ong Teng Cheong Labour Leadership Institute** was founded as the Singapore Institute of Labour Studies in 1990 by the National Trades Union Congress (NTUC). In 2002, the Institute changed its name to Ong Teng Cheong Institute of Labour Studies to commemorate the contributions of the late Mr. Ong Teng Cheong, a former Secretary-General of the NTUC and President of the Republic of Singapore. In 2009, the institute integrated with NTUC Leadership Development Department and took on its present name to create the hub for labour leadership development and advancing tripartism.

The Institute is guided by a Board of Governors comprising senior leaders from the government, trade unions, industry and

academia. The Institute offers various programmes as follows:

- Continuing Professional Development Programmes;
- International Programmes;
- Progressive Leadership Development Programmes;
- Public Courses; and
- Union-Management Programmes.

The **Institute of Systems Science** (ISS) of the National University of Singapore is an IT knowledge transfer institute promoting and fostering IT manpower development. Its education programmes, from master, graduate diploma to professional short courses and seminars, have trained over 60,000 IT professionals and management executives in strategic IT management, IT project management, and software technologies and engineering best practices.

Established in 1981, ISS's initial focus was on the development of a strong and cohesive, industry-oriented educational programme to help organisations accelerate their computerisation process. It now aims to deliver quality lifelong Information Communication Technology (ICT) learning to professionals and senior executives through a combination of e-Learning and classroom activities. Above and beyond training, ISS also provides research and consulting services.

The **Singapore Human Resources Institute** (SHRI) is a not-for-profit professional HR body in Singapore, representing over 3,000 human resource professionals. Founded in 1965, SHRI is committed to promulgate sound, effective and appropriate HR practices and maintain high standards of professionalism in human resource management and development. It also seeks to foster a culture of continual learning that will ensure the development of Singapore's human capital into a highly educated, skilled and employable one.

The Institute offers lifelong learning opportunities through courses ranging from Basic Certificate in HRM to the Master of HR, MBA and Master of Applied Finance. With a wide selection of programmes covering human capital management, financial services and risk management, SHRI also provides corporate training and learning to executives and professionals.