International Rankings

Shanghai Jiao Tong University Rankings (2013)

By fields: 25 in Engineering/Technology and Computer Science
By subjects: 42 in Computer Science, 49 in Mathematics

Quacquarelli Symonds (QS) World University Rankings (by subjects) (2013)

32 in Mathematics, 44 in Electrical & Electronic Engineering
Top 100 in:
- Computer Science & Information Systems
- Civil & Structural Engineering
- Mechanical, Aeronautical & Manufacturing Engineering

Higher Education Evaluation and Accreditation Council of Taiwan Performance Ranking of Scientific Papers for World Universities (by fields) (2012)

In Engineering:
30 Worldwide, 13 Asia-Pacific, 1 Hong Kong

No. of Staff

<table>
<thead>
<tr>
<th>Academic Staff</th>
<th>Research Staff</th>
<th>Administrative/Supporting Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>~290</td>
<td>~370</td>
<td>~250</td>
</tr>
</tbody>
</table>

No. of Students

<table>
<thead>
<tr>
<th>Research Degrees</th>
<th>Postgraduate Degrees</th>
<th>Bachelor's Degrees</th>
<th>Associate Degrees</th>
</tr>
</thead>
<tbody>
<tr>
<td>~650</td>
<td>~780</td>
<td>~3,490</td>
<td>~920</td>
</tr>
<tr>
<td>Taught Postgraduate</td>
<td>Undergraduate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>20</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

No. of Programmes/Majors

- Postgraduate: 15
- Undergraduate: 20
- Associate Degrees: 4

State Key Laboratories
- State Key Laboratory in Marine Pollution
- State Key Laboratory of Millimeter Waves

Research Centres
- Centre for Advanced Structural Materials
- Centre for Chaos and Complex Networks
- Centre for Electronic Packaging and Assemblies, Failure Analysis and Reliability Engineering
- Centre for Functional Photonics
- Centre for Innovative Applications of Internet and Multimedia Technologies
- Centre for Nanotechnology and Biomedical Microsystems
- Centre for Power Electronics
- Centre for Prognostics and System Health Management
- Centre for Robotics and Automation
- Centre of Super-Diamond and Advanced Films
- Centre for System Informatics Engineering
- Liu Bie Ju Centre for Mathematical Sciences
- Joint Laboratory of Nanomaterials and Mechanics (with Institute of Metal Research)
- Joint Laboratory of Organic Functional Materials and Devices (with Technical Institute of Physics and Chemistry)

Academic Units
- Department of Biology and Chemistry
- Department of Civil and Architectural Engineering
- Department of Computer Science
- Department of Electronic Engineering
- Department of Mathematics
- Department of Mechanical and Biomedical Engineering
- Department of Physics and Materials Science
- Department of Systems Engineering and Engineering Management
- Division of Building Science and Technology
Introduction

The College of Science and Engineering (CSE) benefits from an exceptional combination of integrated science and engineering facilities that enables it to bring innovative skills to teaching, learning and research.

Through the full cooperation of the various science and engineering units, the CSE achieves and maintains an interdisciplinary world that facilitates a high-standard learning environment.

The CSE is proud of the quality of its faculty, featuring local and overseas professors from all parts of the world. Numbered among the best available in terms of their qualifications and experience, these professors are dedicated to moulding a bright future for their students.

Our Vision

To win international recognition as one of the best science and engineering colleges in the Asia-Pacific region

Our Mission

To nurture and develop the talents of students and create applicable knowledge to support social and economic advancement
The College continues to play an important role in helping the University maintain its prominent position in world standings by keeping meaningful research at the forefront of its approach to teaching and learning. This approach has already brought about some quite remarkable achievements: made evident by the establishment of two State Key Laboratories – specialising in the fields of millimetre waves and marine pollution, two joint laboratories with the Chinese Academy of Sciences and ten research centres. Furthermore, in 2010-2011, the College was awarded more than 1,190 funded research projects worth more than HK$736 million.

It is also important to stress that these accomplishments reflect the dedication and commitment to research by the College’s body of distinguished scholars. Among the faculty, eight staff members have been honoured as academicians, three are recognized by ISI Highly Cited Researchers, while others have been awarded various prestigious international honours.

Despite the acclaim and success, the College does not rest on its laurels and will continue to broaden its research spectrum. On the teaching front, for example, the College strives to instil in its students the 4 Is: an International outlook; an Interdisciplinary background; an Innovative approach, and Interpersonal skills. Students will learn and implement these skills in the College’s nine academic units that possess expertise across diverse domains in science and engineering. Further advantages for students are made accessible by an interdisciplinary background honed through a highly active, interdepartmental/divisional collaborative initiative.

In addition to delivering a forward-looking curriculum, the College gives enthusiastic support to students by allowing them to work hand-in-hand with faculty members in meaningful research activities. Students are also encouraged to exploit novel ideas and scientific innovation, and thus obtain an early taste of research during their undergraduate studies.

Students also benefit from the College’s extensive and close ties with various sectors of industry, and array of training opportunities carefully aligned with their major studies. The College has several well-established placement schemes that provide a platform to enable students to display and sharpen their professional and interpersonal skills in real-life settings. The College’s worldwide academic partnerships and exchange programmes also allow students to study at top universities around the globe. Indeed, since 2006, over 760 inbound and outbound students have taken advantage of the exchange programmes.

Drawing on these pillars of strength, the College will continue to nurture research excellence, and to provide students with a solid foundation for their future success by cultivating their talents to the full. I am confident that the College’s global focus and interdisciplinary approach will continue to steer it into the fulfilment of its stated aspiration to become one of the best science and engineering colleges in the Asia-Pacific region.

Jian Lu
Dean, College of Science and Engineering

The College of Science and Engineering (the College) is a dynamic, forward-looking part of the City University of Hong Kong (CityU). Established in 1990, the College has become renowned for setting a strong pace for excellence in research and teaching, while simultaneously maintaining important and mutually beneficial links with various sectors throughout Asia-Pacific.

The College strives to not only provide excellent higher education opportunities, but also aspires to nurture and develop individual talent using an appropriate and applicable knowledge base that is always in touch with and fully supports ongoing social changes and economic advances.

CityU was among the world’s top 50 universities in the fields of engineering, technology and computer science, according to the academic ranking of world universities published by the Shanghai Jiaotong University in 2011. It is a testament to the faculty’s hard work and sustained efforts.

Message from the Dean

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The vibrant teaching-learning approach undertaken at the CSE is reflected in on-campus studies, with students frequently demonstrating an eagerness to make the most of their university experience and formal education by seeking opportunities beyond the four walls of the classroom. Fully supporting students’ aspirations, the CSE is a haven for learning where the generations of tomorrow can prosper in a supportive, encouraging and motivational environment.

The CSE focuses on preparing students for both employment and further studies, placing emphasis on knowledge that has application in a multitude of professions. Students are encouraged to participate actively in the learning process, while their professors utilize numerous state-of-the-art and innovative techniques to attain a beneficial and practical learning environment.

The CSE also places great emphasis on discovery and innovation, which are firmly embedded in the current curriculum. In 2012, the emphasis will be augmented with the implementation of the four-year degree curriculum. All first-year students will be offered the opportunity to acquaint themselves with various study fields, and to benefit from an introduction to research activities.

**Peer-Assisted Learning scheme using Supplemental Instruction (PALS)**

PALS is organized by the Office of Education Development and Gateway Education (EDGE) in collaboration with the CSE. It is a joint learning model designed to improve both performance and motivation in education, and aims at enhancing the understanding of course materials and improving overall learning and reasoning skills. Regularly scheduled, out-of-class and peer-facilitated review sessions are open to all students taking PALS courses.

As PALS is a course-based learning initiative, senior students who performed well in the courses are invited to become PALS Leaders. They meet junior students to discuss academic work and share tips on effective learning strategies.

**Cultural and Language Immersion Scheme (CALIS)**

The purpose of CALIS is to improve communication skills in English through immersion in overseas community activities and projects. The scheme includes intensive English language instruction as well as cultural and social activities and community projects designed by overseas partner institutions.

Successful completion of the scheme will enable a student to communicate in English with increased confidence and with particular emphasis on the use of English for academic purposes. Students will have a greater awareness of, and empathy toward, the target culture, thus helping to gain a better understanding of the inter-cultural differences between Hong Kong and overseas countries. The ultimate goal is the application of language learning strategies and cross-cultural communicative skills for use in multi-cultural environments.

**Mentor Training**

The CSE accentuates motivation and whole person development. Potential student mentors are provided with a general training in skills such as leadership, communication and problem-solving to ensure they are well-equipped to take up their roles. The training programme is designed by professional organizations, and student mentors are taught how to face challenges through sports activities.

**Internship Schemes**

The CSE offers different internship schemes designed to plunge students into a working atmosphere at medium-sized enterprises and large corporations both in Hong Kong and around the world.

- Summer Industrial Attachment
- Industrial attachment for an extended period of 9-12 months, usually involving final year projects
- Industrial attachment for inbound exchange students

**Student Exchange**

The CSE holds that diversity fosters fresh approaches, and new ways to both visualize and maximize the teaching-learning potential. In furtherance of this belief, for example, students may enhance their learning experience by travelling to different campuses via various exchange programmes with renowned universities such as the University College London, University of Toronto, the Carnegie Mellon University, the National University of Singapore, the McGill University, the Tsinghua University as well as the Korea Advanced Institute of Science and Technology. At the same time, the CSE accepts students from overseas partner institutions.
Research

The CSE adopts a thoroughly professional and committed approach to research, working with governmental, industrial and commercial sectors to focus on solution-based studies with maximum practicality as the ultimate goal. Through these concerted efforts, the CSE has achieved international competitiveness in areas such as applied mathematics, bioengineering, molecular and life sciences, computer science, electronic engineering, environmental science, energy and built environment, materials science and engineering, and sustainable manufacturing.

The quality research team of the CSE features eight academicians and recipients of prestigious awards like the Wolf Prize, Fields Medal, Grand Prize from the French Academy of Sciences, Alexander von Humboldt Research Award, Institute of Electrical and Electronics Engineers (IEEE) Rudolf Chope Research and Development Award, State Natural Science Award, Institution of Engineering and Technology (IET) Achievement Medal and Higher Education Outstanding Research Award (Science and Technology) from the Ministry of Education of the People’s Republic of China.

In the past few years alone, the CSE faculties published more than 1,000 papers annually in journals listed in the Science Citation Index (SCI). These submissions average more than five papers per capita, a figure that is comparable to internationally renowned universities in the world.

Research Grants

The eminence of work done at the CSE is evidenced by the number of research grants received, including those from highly acclaimed funding resources such as the Research Grants Council Earmarked Research Grant (HK$15 million for 172 on-going projects) and the Innovation and Technology Fund (HK$47 million for 14 on-going projects).

Research Students

Supplementing a college renowned for the quality of its professors, research students remain a prime, indispensable resource. In that regard, the high level of academic renown achieved by the CSE professors attracts some of the best postgraduate students from local, Mainland and overseas universities keen to pursue research studies here. In addition, the output of the CSE research students is above the mark. About 600 journals were published annually in recent years.

Knowledge & Technology Transfer

The CSE believes that applied research can easily be made technologically and commercially viable through advanced technology transfer protocols. In that regard, the CSE promotes and supports knowledge transfer activities across all disciplines. In concert with the University’s Knowledge Transfer Office, the CSE seeks to bring significant discoveries to a wider audience to enhance social and economic well-being. In addition, through contract research and consultancy, the CSE also performs R&D activities funded by both industry and government organizations.

The CSE also offers a variety of professional services catering to the specific needs of the local community. This is made possible by a wealth of technological resources in the various disciplines of the CSE. Many of these facilities are among the most advanced in both Hong Kong and Asia-Pacific.
The CSE also has strong links with more than 200 companies/overseas institutions, including multi-national corporations such as AECOM, Emerson, Cathay Pacific Catering, Chubb, DHL, Gammon, Samina-SCI, TDK, and Siemens. In addition to generous donations, these partner corporations provide students with internship opportunities.

While the financial assistance helps to further enhance the learning environment, the CSE also actively solicit other non-financial forms of support, like professional advice and guest lectures, from its collaborators.

The CSE puts in considerable efforts in recruiting internationally renowned scholars, as well as promising young scholars who show good potential in areas of existing strengths or areas for new development.

In line with the University's strategic plan, the CSE also endeavours to enhance the diversity of the student body through recruitment of international students.

Meanwhile, the CSE seeks to invite prominent academics to deliver public lectures or short courses to expand students' international perspectives.

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Excellence in Research & Professional Education

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