

A world of opportunities awaits.



Queensland University of Technology  
Science and Engineering Faculty  
Brisbane Australia

- Study
- Research
- Internships

Are you ready?

# Outbound Mobility Guide

Science and Engineering Faculty

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## More information

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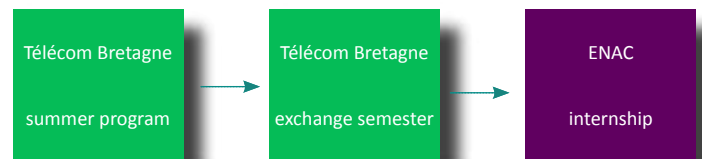
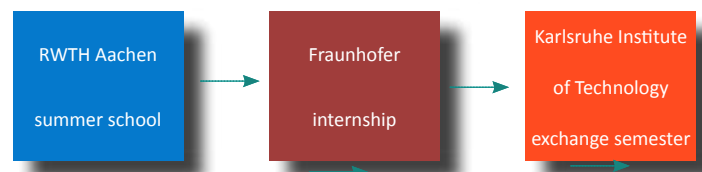
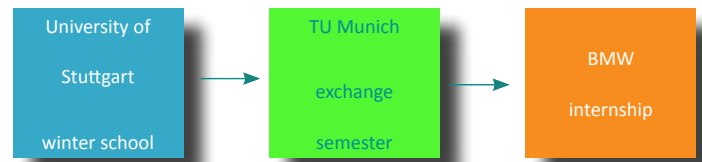


# Options for gaining international experience

- Going on exchange
- Undertaking an internship
- Enrolling in a short-term program



You may be able to combine two or all three of the above, giving you the complete experience to significantly enhance your learning opportunities, intercultural skills, international networks and your CV.



# Outbound mobility support initiative

The Science and Engineering Faculty is offering top-up funding support to the value of \$500 each for 20 students who are successful in securing an exchange place at one of the following institutions in 2015:

Pontifical Catholic University of Minas Gerais	Brazil
Polytechnique Montréal	Canada
Tongji University	China
Universidad de Los Andes	Colombia
Universidad EAFIT	Colombia
Aarhus University	Denmark
Aalto University	Finland
Grenoble Institute of Technology	France
RWTH Aachen	Germany
Hong Kong Polytechnic University	Hong Kong
Agder University	Norway
Warsaw University of Technology	Poland
Tomsk Polytechnic University	Russia
Nanyang Technological University	Singapore
Czech Technical University in Prague	Czech Rep.
Chalmers University of Technology	Sweden
Thammasat University	Thailand
Bilkent University	Turkey
Istanbul Technical University	Turkey
Illinois Institute of Technology	USA





# Science and Engineering Faculty exchange partners

## North America

Canada	USA
<p><b>Polytechnique de Montréal</b> Founded in 1873, École Polytechnique de Montréal is one of Canada's largest engineering schools with a reputation for outstanding teaching and research.</p> <p><b>University of Waterloo</b> Located at the heart of Canada's technology hub, Waterloo has become a leading comprehensive university with 34,000 students. Consistently ranked Canada's most innovative university, Waterloo is home to advanced research and teaching in science and engineering, health, environment, arts and social sciences. Established in 1957.</p> <p><b>Bishop's University</b> Established in 1843, Bishop's University is predominantly a residential, undergraduate university and is located in the bilingual community of Lennoxville, a suburb of Sherbrooke, the 5th largest city in the province of Quebec.</p> <p><b>Dalhousie University</b> Located in the heart of Halifax, Nova Scotia, Dalhousie is a leading, research-intensive Canadian university offering more than 180 degree programs in 11 diverse faculties.</p> <p><b>Arizona State University</b> Established in 1885 in Phoenix, it is one of the largest public universities in the USA.</p> <p><b>Illinois Institute of Technology</b> Established in 1890 in Chicago, IIT is a national, technological, Ph.D.-granting research university, with world-renowned programs in engineering, architecture, the sciences, humanities, psychology, business, law and design. IIT was ranked the most sustainable university in Illinois.</p> <p><b>Purdue University</b> Located in West Lafayette, Indiana, and founded in 1869, Purdue is one of the largest universities in the US and consistently ranks among the top public universities. Longstanding tradition of excellence across the engineering disciplines.</p>	<p><b>Rensselaer Polytechnic Institute</b> Located in upstate New York and founded in 1824, RPI is the oldest technological university in the US. One of the world's most powerful university-based supercomputing centre. Expertise across biotechnology and the life sciences; energy and the environment; computational science and engineering; nanotechnology and advanced materials.</p> <p><b>Northeastern University</b> Founded in 1898, Northeastern University is a private research university located in the heart of Boston, and a leader in interdisciplinary research, urban engagement, and the integration of classroom learning with real-world experience. Their signature co-operative education program, one of the largest and most innovative in the world, is ranked among the best in the nation.</p> <p><b>San José State University</b> San Jose State is conveniently located in downtown San José, midway between San Francisco and the Monterey/Carmel area at the sunny southern end of San Francisco Bay. Established in 1974 with origins back to 1857, making it the oldest public institution of higher education on the West Coast of the United States.</p> <p><b>University of Florida</b> The University of Florida, one of the largest and oldest in the state, is located in Gainesville and continually ranked as one of the best places to live in the United States. Established in 1853.</p> <p><b>University of South Carolina</b> Located in the city of Columbia, USC, with over 200 years' history, offers students a welcoming and dynamic learning environment. USC has a long history of actively working with major aerospace companies, including Boeing, Airbus, Lockheed-Martin.</p> <p><b>University of Wyoming</b> Nestled between two mountain ranges in southeastern Wyoming, UW offers varied academic and lifestyle opportunities including year-round cultural and recreational activities.</p>

## Europe

Austria	Czech Republic	Denmark	Finland	France
<p><b>TU Vienna</b> The Vienna University of Technology (TU Vienna) is located in the heart of Europe, in a cosmopolitan city of great cultural diversity. For nearly 200 years, the TU Vienna has been a place of research, teaching and learning in the service of progress. The TU Vienna is among the most successful technical universities in Europe and is Austria's largest scientific-technical research and educational institution.</p> <p><b>Czech Technical University in Prague</b> ČVUT is the top technical university in the country with a history dating back to 1707. Located in the heart of Europe in one of Europe's most charming cities, students have a wide range of study options in engineering or information technology.</p> <p><b>Aarhus University</b> Established in 1928, Aarhus University is a leading public university which offers over 1000 courses in English, including the fields of engineering, sciences and mathematics. The university's main campus is located in the city of Aarhus, a dynamic city on Denmark's Jutland peninsula. Beach, harbour and forest are all within a 15-minute bike ride.</p> <p><b>TU Denmark</b> Established in 1829 and located in Lyngby, Denmark, the Danish Technical University is one of Europe's leading technical universities, internationally recognised for world-class teaching and research in engineering, technology and the physical sciences.</p> <p><b>Aalto University</b> Established in 2010, Aalto University in Helsinki is a new university with centuries of experience, created from the merger of three Finnish universities: The Helsinki School of Economics, Helsinki University of Technology and The University of Art and Design Helsinki. Aalto University School of Science and Technology has been divided into four new schools starting from 1st of January 2011. Aalto is located in the largest innovation/technology hub in northern Europe which has twice been selected by the EU as one of the most innovative regions in Europe.</p>	<p><b>École Centrale Paris</b> Founded in 1829, ECP is one of the oldest and most prestigious engineering schools in France and is located in the south-western part of Paris, Châtenay-Malabry. ECP has a fundamental global focus, with each of its subjects taught in a global context. Among Ecole Centrale Paris' graduates are many well known engineers and industrialists including Eiffel, Michelin, Peugeot, and Schlumberger.</p> <p><b>Grenoble Institute of Technology</b> With origins back to 1892, Grenoble Institute of Technology is a renowned engineering and science school with a strong record of research and innovation. Close co-operation with industry. Key areas include Energy, Water, Environmental Sciences Informatics, Applied Mathematics, Biomaterials, Telecommunications, Advanced Systems, Applied Physics and Materials Science.</p> <p><b>Télécom Bretagne</b> Located in the city of Brest on the Atlantic coast of Brittany and founded in 1977, Télécom Bretagne offers a highly internationalised teaching and research environment and is one of the most prestigious graduate engineering schools in France. Other campuses are located in Rennes and Toulouse.</p> <p><b>Télécom SudParis</b> Founded in 1979 in the Évry commune in the southern suburbs of Paris, TSP is a leading graduate school of engineering and part of Institut Mines-Télécom, the reference Institute for Information and Communication Technology in France. Focuses primarily on Information and Communication Technology.</p> <p><b>ENAC / ISAE / ENSEEIHT</b> Three premier French engineering schools, each standing as leading centres of teaching and research in the heart of Europe's Aerospace Valley, with close co-operation with major industry players including Airbus and Thales.</p> <ul style="list-style-type: none"> <li>• Ecole Nationale de l'Aviation Civile</li> <li>• Institut Supérieure de l'Aeronautique et de l'Espace</li> <li>• Institut National Polytechnique de Toulouse – Ecole National Supérieure d'Electronique, d'Electrotechnique d'informatique, d'Hydraulique et des Telecommunications (ENSEEIH)</li> </ul>			

## Europe

<p><b>FH Frankfurt am Main</b> The University of Applied Sciences, Frankfurt, is a large public institution with a strong international orientation, with renowned expertise in construction, informatics and engineering.</p> <p><b>Karlsruhe Institute of Technology</b> KIT was established in 2009 through the merger of Forschungszentrum Karlsruhe and the Universität Karlsruhe (established in 1825). KIT is one of the most prestigious research-intensive institutions not only in Germany, but in Europe.</p> <p><b>TU Berlin</b> Established in 1879, TUB is one of the largest technical universities in Germany and has a higher proportion of international students relative to other German universities.</p> <p><b>TU Darmstadt</b> Established in 1877, TUD is at the centre of Darmstadt, the City of Science. The University is a major contributor to the welfare and growth of the Rhine-main-Neckar region, one of the best developed metropolitan areas in Europe. Excellent non-university research facilities in and around Darmstadt have collaborated closely with TU Darmstadt for years. TUD is an internationally oriented university, with international students comprising over 20 percent of its student body of about 21,000, well above the average for German universities.</p> <p><b>TU Munich</b> Founded in 1848, TUM is located in one of Germany's major industry and research hubs, Munich. TUM was one of the first universities in Germany to be named a University of Excellence. In the international Shanghai Ranking (ARWU), TUM was rated the number one German university in 2011.</p> <p><b>University of Stuttgart</b> Established in 1829 and located in a high-tech hub city, Universität Stuttgart is renowned in numerous fields including advanced automotive engineering, automation, process engineering and aerospace technology. It is a member of the prestigious, research intensive TU9 network.</p>	<p>Germany</p>	<p><b>RWTH Aachen</b> Located in the student-friendly and historical city of Aachen in the southwest of Germany at the crossroads of three cultures. Founded in 1870. With its 260 institutes in nine faculties, RWTH Aachen is among the leading group of European scientific and research institutions.</p> <p><b>WWU Münster</b> With over 37,000 students, WWU is the fifth-largest university in Germany. The Centre for Higher Education Development (CHE) has ranked WWU Münster top grades for communication sciences and business information systems.</p> <p><b>Universität Paderborn</b> Founded in 1972, UP is recognised for its strength in computer science - ranked among the top 3 programs in the most comprehensive and detailed ranking of German universities by the Centre for Higher Education Development (CHE). Also ranked among the leading institutions for gaining research funding in the areas of electrical engineering, computer science and systems engineering by the German Research Council.</p> <p><b>Politecnico di Torino</b> Originating from a technological school for engineers in 1859, PoliTo is Italy's oldest technical university and is one of Europe's top technical universities. In addition to strengths in fields including information systems, architecture and aerospace engineering, their international reputation for automotive engineering excellence is bolstered by close co-operation with Italy's largest car manufacturer, Fiat, headquartered in Torino.</p> <p><b>Politecnico di Milano</b> Founded in 1863 and originally focused on civil and industrial engineering, PoliMi is the largest technical university in Italy and the oldest university in Milan. Strong research reputation. Achieved renown across much wider fields including electrical, energy and mechanical engineering; physics and chemistry.</p>	<p>Germany</p> <p>Italy</p>
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## Europe

<p><b>TU Delft</b> One of Europe's leading technical universities, established in 1842, and located in Delft, Netherlands. Member of the prestigious IDEA League and the engineering/technology groups CESAER and UNITECH.</p> <p><b>Norwegian University of Science and Technology</b> Founded in 1910 in the northern coastal city of Trondheim, NTNU is Norway's second largest university. NTNU assumed the main national responsibility for higher education in engineering and technology. Situated in one of Norway's most popular student cities, exchange students choosing NTNU are able to meet people through any of the approximately 350 different student organisations.</p> <p><b>Agder University</b> Established in 2007, but with origins dating back to 1839, the University of Agder is a young university that aims to be creative and innovative. Two locations in southern Norway - Kristians and and the very modern Grimstad campus.</p> <p><b>Østfold University College</b> Located in the southeast part of Norway, between the capital city, Oslo and the Swedish border, Østfold University College. Disciplines offered include IT, Computer Science and Engineering.</p> <p><b>Warsaw University of Technology</b> With origins dating back to 1826, Warsaw University of Technology is the oldest and the most prestigious technical university in Poland. Based in Warsaw, Poland, and with a long history of close and successful co-operation with industry.</p> <p><b>Tomsk Polytechnic University</b> Founded in 1896, TPU is one of Russia's leading technical universities and is the oldest engineering institution in the Asian part of Russia.</p>	<p>Netherlands</p> <p>Norway</p> <p>Poland</p> <p>Russia</p>	<p><b>Universidad Politecnica de Madrid</b> One of the largest and most influential technical universities in Spain - established in 1971 with origins tracing back to the 17th century. Comprehensive range of engineering, disciplines, maths and computer science courses offered.</p> <p><b>Universidad Carlos III de Madrid</b> Founded in 1989, UC3M is renowned for its teaching, research and international engagement and outlook.</p> <p><b>Chalmers University of Technology</b> Chalmers is a highly progressive university situated in Gothenburg and was founded in 1829. Approximately 40% of Sweden's graduate engineers and architects are educated at Chalmers.</p> <p><b>KTH Royal Institute of Technology</b> Located in Stockholm and founded in 1827, KTH is one of Scandinavia's largest engineering- and technology-oriented universities and is renowned throughout Europe and globally.</p> <p><b>Linköping University</b> Gaining full university status in 1975, Linköping University is one of Sweden's largest universities and has close connections with industry, including collaboration in science parks in Linköping and Norrköping. In addition to research excellence, LU has a strong tradition of interdisciplinarity and innovation.</p>	<p>Spain</p> <p>Sweden</p>
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## Europe

**Bilkent University**  
 Founded in 1984 in Ankara, Bilkent University is the premier university in Turkey. All courses delivered in English .

**Istanbul Technical University**  
 Established in 1773, ITU remains one of the leading and internationally recognised engineering- and science-focused institutions in Turkey. Large range of courses delivered in English.

**Middle East Technical University**  
 Located in the capital city of Ankara, METU specialises in engineering and the natural sciences. Founded in 1956. All courses delivered in English.

**Özyeğin University**  
 Located in Istanbul, Özyeğin University is a young and innovative institution, having been established in 2007 and offers exchange students a highly modern learning environment. English is the language of instruction.

**Leeds University**  
 Founded in 1904, Leeds University has actively developed a cosmopolitan campus with an international student population of over 6,000 drawn from 145 countries. On a single campus about a ten-minute walk away from Leeds city centre. It is an eclectic mix of the old and the new reflecting its 100 years history. Brand new buildings and state-of-the-art facilities co-exist with impressive older landmark buildings.

**University of Strathclyde**  
 Established in Scotland's largest city, Glasgow, in 1964, the University of Strathclyde has origins dating back to 1796. Renowned for teaching and research excellence.

**Aston University**  
 Established in 1966 in the student-friendly city of Birmingham (with origins back to 1895), Aston is consistently ranked highly for student satisfaction. The Aston Science Park is adjacent to the university.

**City University of London**  
 Since gaining university status in 1966, CUL has been ranked in the top 4 London-based universities. CUL offers students a cosmopolitan and dynamic academic environment in the heart of London.

Turkey



UK

## Asia

**Hong Kong Polytechnic University**  
 Established in 1972 and with origins dating back to 1937, HKPU is the largest publicly-funded university in Hong Kong. Renowned for its strengths in civil engineering, construction, technology, computer science and maths.

**City University of Hong Kong**  
 In 2013, CityU ranked first in the greater China area including Hong Kong, and 25th worldwide, in the fields of Engineering/Technology and Computer Sciences. Innovative focus and ranked no. 5 of top universities under 50 years of age (2013).

**Tongji University**  
 Established in Shanghai in 1907, Tongji is one of the oldest and most prestigious universities in China. Key strengths include civil, software and automotive engineering, urban planning and environmental science.

**Hokkaido University**  
 Established in Sapporo in 1876, HU is one of the top Imperial universities of Japan, internationally recognised for the high quality teaching and research institution. HU Research internships (engineering, science and information technology).

**Japan Advanced Institute of Science and Technology**  
 Established 1990, JAIST is located in the centre of Ishikawa Science Park (ISP), in the south of Kanazawa City. JAIST was Japan's first graduate institute for the purposes of advancing science and technology and training and educating future leading scientists and engineers.

**Nanyang Technological University**  
 Ranked in the top 10 of engineering and IT universities in Asia and one of the fastest growing universities in the region.

China  
 including  
 Hong Kong

Japan

Singapore

**Korea Advanced Institute of Science and Technology**  
 Established in 1971 in the technology hub city of Daejeon as the nation's first research oriented science and engineering institution, KAIST is renowned for theoretical and applied research. Having merged with the Information and Communications University in 2009, KAIST expanded its teaching and research capacity, supporting its role as the major provider of high-tech human resources for Korea's ever-growing economy.

**Inha University**  
 Founded in 1954 and located in Incheon, gateway city to Northeast Asia, Inha University boasts a long tradition and heritage focusing on the natural sciences and engineering.

**National Tsing Hua University**  
 Established in 1956 in the city of Hsinchu, its origins date back to 1911. Strong reputation in engineering and the sciences. The campus is conveniently located, neighbouring several national research institutes and Hsinchu Science Park, the silicon valley of Taiwan.

**National Sun Yat-Sen University**  
 Founded in 1924 in the southern city of Kaohsiung, NSYSU has been ranked in the top 3 universities in Taiwan.

**Mahidol University**  
 In 2011, ranked as the top university in Thailand. Established in Bangkok in 1943 with origins dating back to 1888, MU is a premier research-oriented institution.

**Thammasat University**  
 Located in Bangkok, TU is one of Thailand's most prestigious teaching and research institutions and was established in 1934.

South Korea

Taiwan

Thailand

## Latin America

<p><b>Pontifical Catholic University of Minas Gerais</b> Founded in 1958 in the city of Belo Horizonte, PUC Minas is one of the five largest universities in Brazil. Minas Gerais is a Queensland sister-state.</p> <p><b>University of São Paulo</b> USP is Brazil's premier university for teaching and research and ranked number one in South America.</p> <p><b>Fundação Armando Alvares Penteado</b> Established in São Paulo in 1947, FAAP is a leading private institution whose offerings include IT, engineering and computer science.</p> <p><b>Pontificia Universidad Catolica de Chile</b> Established in Santiago in 1888, PUC Chile has been ranked among the top five universities in the Spanish speaking world.</p>	<p>Brazil</p>	<p><b>Tecnológico de Monterrey</b> Founded 1943, Tec comprises a network of 31 campuses and is one of the largest private institutions in Latin America.</p> <p><b>Universidad de Los Andes</b> Established in 1948 in Bogotá, UniAndes is a premier teaching and research-intensive institution, one of Colombia's top universities and ranked in the top 10 in Latin America.</p> <p><b>Universidad EAFIT</b> Established originally as a private business-oriented university in 1960 by a group of Medellín's business leaders, EAFIT expanded to incorporate engineering and science disciplines i.e. computer science, physics, geology, mathematics, and mechanical / civil / electrical engineering. One of Colombia's top universities with a strong international outlook.</p> <p><b>Universidad de La Sabana</b> Established in the town of Chía on the northern outskirts of Bogotá in 1979, UniSabana prides itself for its excellent campus, with an area of 50 hectares, surrounded by nature, sporting fields, grassy fields, and footpaths. There are also ample study zones and resources such as laboratories, computer rooms, and an excellent library.</p> <p><b>Universidad del Rosario</b> A prestigious Colombian university founded in 1653 in Bogotá, The main campus located in the historical and geographical centre of Bogotá.</p>	<p>Mexico</p> <p>Colombia</p>
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**Q. Spanish? Portuguese?**

**Can I study in Latin America without being skilled in either language?**

**A. Yes!**

If a partner institution doesn't have relevant units available in English, QUT students can apply to undertake a project in a lab, where the supervision is provided in English.

Students are encouraged to consider gaining some language and cultural skills prior to commencing their international experience to gain the most from their time abroad. Many partner institutions offer language and cultural programs prior to or in parallel to the academic study program.



## Destination Asia

An exciting array of study and intercultural experiences await throughout Asia, with QUT actively engaged with a number of leading universities renowned in the science, technology and engineering fields.

### Partner universities

<p>Tongji University</p> <p>Hong Kong Polytechnic University</p> <p>City University of Hong Kong</p> <p>Korea Advanced Institute of Science and Technology</p> <p>Hokkaido University</p> <p>Japan Advanced Institute of Science and Technology</p> <p>Nanyang Technological University</p> <p>Inha University</p> <p>National Tsing Hua University,</p> <p>Mahidol University</p> <p>Thammasat University</p>	<p>China</p> <p>Hong Kong</p> <p>Hong Kong</p> <p>Korea</p> <p>Japan</p> <p>Japan</p> <p>Singapore</p> <p>South Korea</p> <p>Taiwan</p> <p>Thailand</p> <p>Thailand</p>
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### Bursaries

QUT and the Australian Government strongly encourages students to take up the opportunity to gain their international experience in Asia. Additional funding support is available:

- an increased maximum OS-HELP loan amount of \$7,500, which is \$1,250 more than for other destinations; and
- a supplementary OS-HELP loan amount of up to \$1,000 to assist with the cost of language study undertaken in preparation for overseas study in Asia. (Note: a supplementary loan amount is added to your OS-HELP loan for overseas study, and does not count towards the lifetime maximum of two OS-HELP loans).

[http://studyassist.gov.au/sites/studyassist/help-payingmyfees/os-help\\_overseas\\_study/pages/studying\\_asia](http://studyassist.gov.au/sites/studyassist/help-payingmyfees/os-help_overseas_study/pages/studying_asia)

**Prime Minister's Australia Asia Scholarship** (undergraduate and graduate)  
Generous financial support for 1 -2 semesters of exchange studies plus an internship.  
More information available when the 2015 round opens in April 2014.

[www.innovation.gov.au/internationaleducation/Endeavour/InformationForAustralianApplicants/Pages/PrimeMinistersAustraliaAsiaScholarship.aspx](http://www.innovation.gov.au/internationaleducation/Endeavour/InformationForAustralianApplicants/Pages/PrimeMinistersAustraliaAsiaScholarship.aspx)



## Destination Münster, Germany

Study in English at the Department of Information Systems, headquarters of the European Research Centre for Information Systems (ERCIS), based at the University of Münster. QUT's Information Systems School is the only Australian ERCIS member. The University of Münster holds AACSB Accreditation.

### Units offered in English

- Managing the Information Age Organisation
- IM Tasks and Techniques
- Workflow Management
- Model-driven Software Development
- Supply Chain Management
- Information Systems Architecture
- Information Modelling
- Production Planning and Control
- Data Integration
- MIS and Data Warehousing
- Information Management Theories
- Enterprise Application Integration
- Information Security
- Data Analysis - Theory
- Data Analysis Applications

The MSc. in Information Systems is completely taught in English



## Destination Stuttgart, Germany

The University of Stuttgart is a leading technical-focused university, located in the state capital and cultural centre of Baden-Württemberg, one of Germany's most dynamic industrial regions.

The University of Stuttgart has strong links with the Fraunhofer Institute. QUT students seeking to undertake an internship with Fraunhofer IAO in Stuttgart either as a stand-alone experience or in conjunction with an exchange semester at the University are able to apply for University student accommodation.

### Course options

Options for courses for QUT undergraduate students delivered in English

- Master of Computational Mechanics of Materials and Structure
- Master of Geomatics Engineering
- Master of Information Technology
- Master of Infrastructure Planning
- Master of Physics
- Master of Water Resources Engineering and Management
- Master of Air Quality Control, Solid Waste and Waste Water Process Engineering
- Master of Integrated Urbanism and Sustainable Design

[www.ia.uni-stuttgart.de/internat/bewerber/master/index.en.html](http://www.ia.uni-stuttgart.de/internat/bewerber/master/index.en.html)

Major industrial companies located in and around Stuttgart include:

Bosch	Festo
Porsche	Pilz
Daimler	HP
Trumpf	Stihl
IBM	Züblin
Fischer	Würth



### Short term options

**Winter University:** January - February

For students who have had little or no exposure to German to experience a total immersion in the German language and culture.

**Enhanced Summer Semester**

[www.ia.uni-stuttgart.de/iu/essp/about\\_ssp.html](http://www.ia.uni-stuttgart.de/iu/essp/about_ssp.html)

January	February	March	April	May	June	July
<b>Enhanced Summer Semester Program</b>						
<b>Module 1</b>		<b>Module 2</b>		<b>Module 3</b>		
Participation in the Winter University		German Language Intensive Course		Academic Study Program		





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Destination Norway

Engineering

Oil and Gas

Mechatronic systems



## University of Agder, Norway

Established in 2007, but with origins dating back to 1839, the University of Agder is a young university that aims to be creative and innovative, with locations in southern Norway, Kristiansand and Grimstad.

**Grimstad campus** - Engineering and Information and Communication Sciences

**Kristiansand campus** - Mathematics and Natural Sciences

Agder University is actively engaged with engineering industry partners through the Norwegian Offshore Drilling and Engineering (NODE) cluster, including the NODE Mechatronics collaboration, aimed at ensuring this southern region of Norway is at the forefront of mechatronics innovation and practice.

Want to know more? <http://vimeo.com/23477473>

Grimstad and the surrounding area has been described by the Financial Times as 'A Norwegian mini-Silicon Valley'. It is also Norway's sunniest region.



Photo: Helge Hansen.  
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Photo: André Osmundsen.  
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**Stavanger** is Europe's oil and gas capital, with major international oil companies and related services operating in the Stavanger region, plus Norway's Petroleum Directorate and the Petroleum Safety Authority Norway are also located there. This convergence of industry players has resulted in one of the strongest energy clusters in the world. Approximately 45 000 people in the Stavanger area are employed in the petroleum sector. Stavanger actively cultivates a strong research and development environment, with close co-operation with the University of Stavanger and research centres, developing technological innovations in remote operations, underwater operations and drilling.

**Grimstad and Kristiansand** have a longstanding and leading presence at the centre of Norway's growth in the shipbuilding, oil and gas industries, with the large Norwegian suppliers of drilling and oil loading/unloading systems securing a leading position in the global marketplace. Nymo (Grimstad) designs and manufactures drilling rigs and larger high-tech process modules for the global market. Other companies in the region e.g. Markhus and Flexmodule, design and build offshore hotels. Nymo is part of the NODE business cluster in Southern Norway.

NODE (Norwegian Offshore, Drilling and Engineering) is a collaborative project between companies supplying the oil and gas sector. The NODE cluster has been recognised as the most successful working group in Norway in drilling rigs, oil loading/unloading systems and NOx-reduction efforts.



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Photo: Kjetil Alsвик.  
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## Course options

Structural Design  
 Life Cycle Assessment and Concrete Rehabilitation  
 Project Management with Lean Construction  
 Road Design  
 Mobile App Development  
 Scripting and Hacking  
 Electronics Project  
 Access in Wireless Networks  
 Hydro and Wind Power Plants  
 Fuel Cell Technology  
 Power Electronics for Renewable Energy  
 Renewable Energy  
 Advanced Internet Services and Protocols  
 Mobile Communication Networks  
 Risk Management  
 Discrete Mathematics  
 Product Development  
 Design for Marine Environment  
 Electro Mechanical System Design  
 Industrial IT and Robot Technology

Marine Constructions  
 Mechanical and Material Technology  
 Modelling and Simulation  
 Control Theory  
 Instrumentation  
 Product Development  
 Finite Element Method  
 Norwegian for International Students  
 Research Project - Civil Engineering  
 Research Project - Computer Engineering  
 Research Project - Electrical Engineering  
 Research Project - Mechatronics  
 Research Project - Renewable Energy  
 Wind Power  
 Photovoltaic Technology  
 Distributed and Agent Based Systems  
 Information and System Security  
 Industrial IT  
 Electric Motor Drives  
 Hydraulics Components and Systems  
 3D Modelling and Animation



## University of Stavanger, Norway

QUT's Science and Engineering Faculty (SEF) is establishing an exchange relationship with the University of Stavanger, which will allow SEF students to undertake exchange from 2015. Students will have the opportunity to undertake studies in the Faculty of Science and Technology at UiS, which incorporates the following departments:

- Electrical Engineering and Computer Science
- Petroleum Engineering
- Mathematics and Natural Sciences
- Industrial Economics, Risk Management and Planning
- Mechanical and Structural Engineering and Materials Science

### Courses offered in English

<http://www.uis.no/studies/student-exchange/fields-of-study/science-and-technology/>

University of Stavanger campus



## Østfold University College, Norway

Offering a vibrant, welcoming and innovative study environment, Østfold University College provides a growing number of courses in English and for QUT students, the opportunity to undertake an industry-based projects, capitalising on the strong links Østfold has with local industry. Students will work on the projects throughout the semester on-site with the industry host and/or on-campus at Østfold University College.

<http://www.hiof.no/eng/english/courses-taught-in-english>



## Destination Italy

Choose between two of Europe's top technical universities located in the historical, economically important and culturally vibrant northern region of Italy, Politecnico di Torino and Politecnico di Milano.

The **Politecnico di Milano** is one of the most outstanding technical universities in Europe. Established in 1863, it is the largest and most important university of architecture, design and engineering in Italy. The university consists of two main campuses located in Milan, the heart of fashion and design industries and future venue of the World Expo 2015, and five more locations in Northern Italy.

The **Politecnico di Torino** is known both in Italy and abroad as a leading institution to study engineering and technology-based disciplines. Tradition combines with innovation to make its campus a stimulating environment offering a wealth of opportunities. PoliTo has around 32,000 students, with 50% from outside the region and about 15% who are foreign - the highest percentage in Italy.

Extensive range of units offered in English.

### Politecnico di Torino

Electronic Engineering  
 Mechanical Engineering  
 Telecommunication Engineering  
 Automotive Engineering  
 Computer Engineering  
 Electronic Engineering  
 Mechanical Engineering  
 Mechatronic Engineering  
 Engineering and Management  
 Nanotechnologies for ICTs  
 Petroleum Engineering  
 Physics of Complex Systems

### Politecnico di Milano

Aeronautical Engineering  
 Automation Engineering  
 Civil Engineering for Risk Mitigation  
 Computer Systems Engineering  
 Electrical Engineering  
 Electronics Engineering  
 Energy Engineering  
 Environmental and Geomatic Engineering  
 Management Engineering  
 Materials Engineering and Nanotechnology  
 Mechanical Engineering  
 Space Engineering  
 Telecommunications Engineering  
 Urban Planning







Poitecnico di Milano



## Destination France

### Télécom Bretagne

*Research and Innovation in*

- Telecommunication Systems
- Communication Networks
- Computer Science
- Image and Information Processing
- Network, Security and Multimedia



### Three campuses:

#### Brest

The main campus of Télécom Bretagne is situated in the Brest-Iroise Science and Technology Park.

- Networked Computer Design and Deployment
- Computer Science Applied to Banking and Actuarial Decision-Making
- Web Technologies: systems, services and security
- Renewable marine energy sources

#### Toulouse

Located in the French aerospace hub city of Toulouse.

- Space Communications Systems (in partnership with QUT partners ISAE, ENSEEIHT and Telecom SudParis).

#### Rennes

Located in the Rennes-Atalante Technology Park along with other important R&D centres in the Information Technologies sector (France Telecom R&D, France Telecom Transpac/Equant, Alcatel, Canon).

- Mobile Networks and Services
- Information System Security



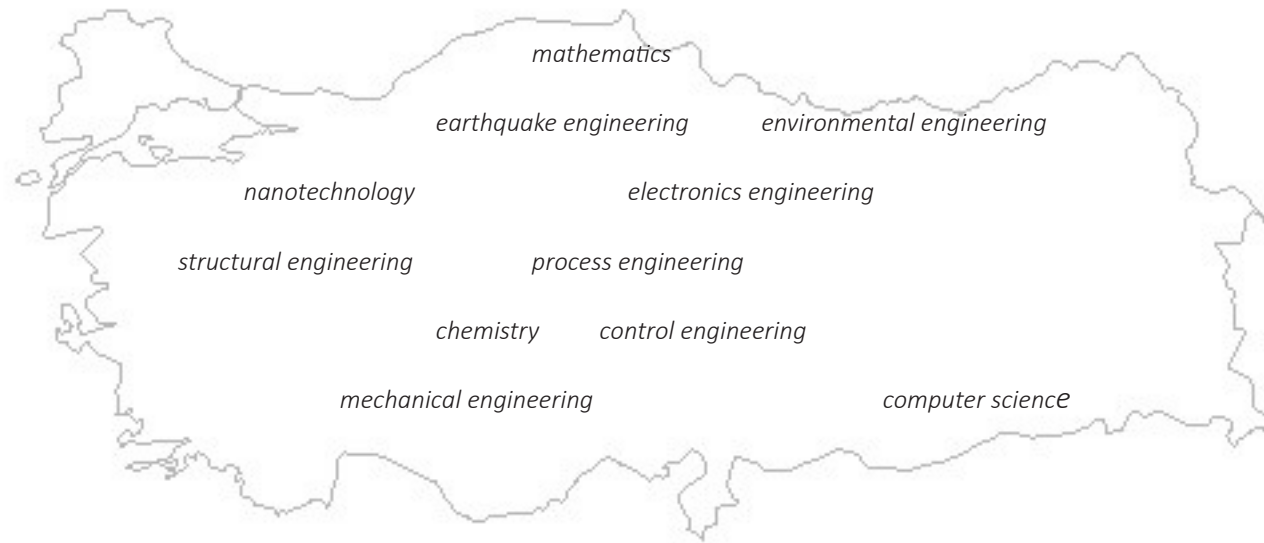
# Destination Turkey

Turkey offers international experience in a dynamic academic and intercultural environment.

QUT's partner universities offer world-class facilities and teach either exclusively or predominantly in English, offering Science and Engineering students from QUT a wealth of opportunity to undertake:

- **coursework studies** on exchange; or
- **research internships**

Bilkent University, offers free on-campus accommodation for incoming exchange students. Whether you are a student of Computer Science, Mathematics, Engineering, Urban Development, IT or Science, a study or research experience at one of QUT's partners in Turkey offers you REAL opportunities.



## Partner universities

Bilkent University	Ankara
Middle East Technical University	Ankara
Istanbul Technical University	Istanbul
Özyeğin University	Istanbul

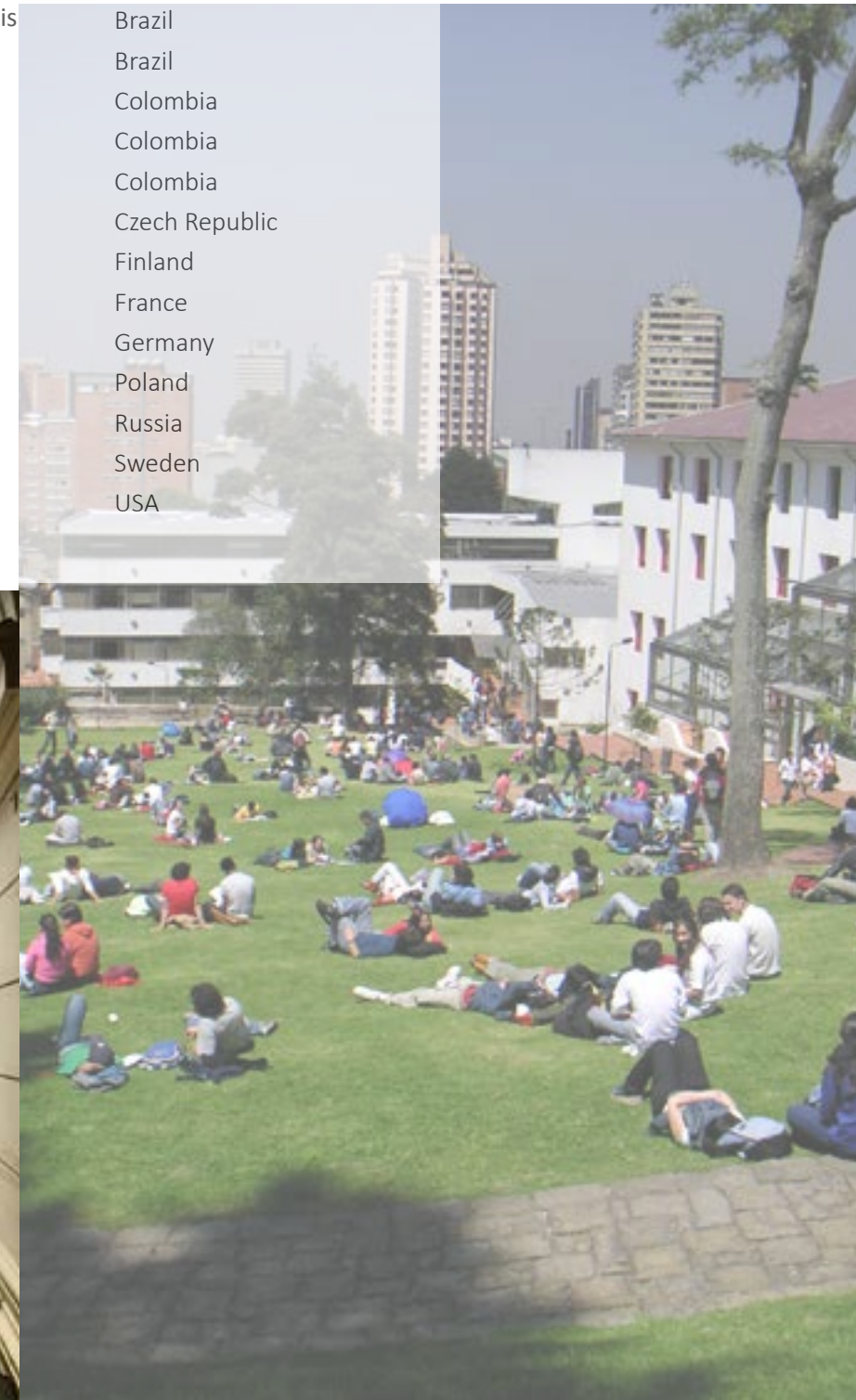
## Course options

- Chemistry
- Computer science
- Control engineering
- Earthquake engineering
- Electronics engineering
- Environmental engineering
- Mathematics
- Nanotechnology
- Process engineering
- Structural engineering

# New exchange partners

- Pontifícia Universidade Católica de Minas Gerais
- University of São Paulo
- Universidad EAFIT
- Universidad de Los Andes
- Universidad del Rosario
- Czech Technical University in Prague
- Aalto University
- Grenoble Institute of Technology
- University of Bielefeld
- Warsaw University of Technology,
- Tomsk Polytechnic University
- Chalmers University of Technology
- Illinois Institute of Technology

- Brazil
- Brazil
- Colombia
- Colombia
- Colombia
- Czech Republic
- Finland
- France
- Germany
- Poland
- Russia
- Sweden
- USA





# International internships

## Industry

**Fraunhofer**  
Fraunhofer is Europe's largest application-oriented research organisation with a focus on health, security, communication, transport, energy and environment. Internships across science, engineering, IT, mathematics and built environment disciplines are available across 80 locations in Germany.

**BMW**  
Internship opportunities are offered by automotive giant, BMW, for QUT engineering (mechanical and electrical), science and design students seeking experience in their manufacturing, and research and development facilities in Germany and the UK.

**Festo**  
A world-leading supplier of pneumatic and electrical automation technology. Each month Festo employs an average of 120 interns, working student and university students from around the world.

**Züblin**  
One of Germany's largest building construction and civil engineering companies, with a worldwide footprint.

**Hochtief**  
A leading international construction company, with internships across the civil and construction engineering areas.

**Østfold University College**  
Located in the southeast part of Norway, between the capital city, Oslo and the Swedish border, Østfold University College facilitates placements in IT, Computer Science and Engineering.

Germany

Norway

## University-based

**Polytechnique de Montréal**  
Founded in 1873, École Polytechnique de Montréal is one of Canada's largest engineering schools with a reputation for outstanding teaching and research.

**Universidad de Los Andes**  
The top private university in Colombia, UniAndes offers excellent facilities and research lab environments, with supervision of research placements available in English.

**Hokkaido University**  
Research internships available for engineering and science students, with supervision provided in English. Research internships may be undertaken in one of the following Graduate Schools:

- Engineering
- Information Science and Technology
- Chemical Sciences and Engineering.

**Nanyang Technological University**  
Summer Research Internship program - for a minimum of two months. Eligible overseas undergraduate students will be given an allowance, and are expected to fulfill an 8-week research attachment comprising project work at Nanyang Technological University (NTU).

**Tomsk Polytechnic University**  
Short-term project-based internships available in TPU institutes.

**TU Darmstadt**  
One of Germany's top technical universities, located in the state of Hessen, with which Queensland has a state-to-state cooperation agreement. The International Research Experience Program (IREP) consists of two components: the Research Internship and the Intensive German Language Course.

**University of Stuttgart**  
Study and Internship program, offers engineering students the ability to undertake a cultural/language immersion, an academic semester and a research internship.

Canada

Colombia

Japan

Singapore

Russia

Germany

# Fraunhofer institutes for applied research, Germany

## Internship possibilities



Photo: Bernd, Müller, ©Fraunhofer IAO

### Civil Engineering and the Built Environment

Building Physics  
Information Centre for Planning and Building  
Transportation and Infrastructure Systems

### Information Systems

Intelligent Analysis and Information Systems  
Open Communication Systems

### Electrical Engineering and Computer Science

Algorithms and Scientific Computing  
Applied Information Technology  
Applied and Integrated Security  
Communication, Information Processing and Ergonomics  
Computer Graphics Research  
Digital Media Technology  
Electronic Nano Systems  
Embedded Systems and Communication Technologies  
Experimental Software Engineering  
Integrated Circuits Integrated Systems and Device Technology  
Microelectronic Circuits and Systems Modular Solid State Technologies  
Optronics, System Technologies and Image Exploitation  
Telecommunications  
Reliability and Microintegration  
Secure Information Technology  
Software and Systems Engineering  
Solar Energy Systems

### Earth, Environmental and Biological Systems

Environmental, Safety and Energy Technology  
Marine Biotechnology  
Molecular Biology and Applied Ecology

### Chemistry, Physics and Mechanical Engineering

Applied Optics and Precision Engineering  
Applied Polymer Research  
Applied Solid State Physics  
Industrial Engineering  
Interfacial Engineering and Biotechnology  
Laser Technology  
Machine Tools and Forming Technology  
Manufacturing Engineering and Automation  
Manufacturing Technology and Advanced Materials  
Electron Beam and Plasma Technology  
Material Flow and Logistics  
Material and Beam Technology  
Mechanics of Materials  
Biomedical Engineering  
Ceramic Technologies and Systems  
Chemical Technology  
Factory Operation and Automation  
High Frequency Physics and Radar Techniques  
High-Speed Dynamics, Ernst-Mach-Institut  
Medical Image Computing  
Photonic Microsystems  
Polymeric Materials and Composites  
Organics, Materials and Electronic Devices  
Process Engineering and Packaging  
Production Systems and Design Technology  
Solar Energy Systems  
Surface Engineering and Thin Films  
Structural Durability and System Reliability  
System Technology  
Wind Energy and Energy

### Mathematical Sciences

Industrial Mathematics



# 2014 POLYTECHNIQUE MONTRÉAL SUMMER RESEARCH INTERNSHIP

POLYTECHNIQUE  
MONTRÉAL

LE GÉNIE  
EN PREMIÈRE CLASSE



## Polytechnique Montréal

Founded in 1873, Polytechnique Montréal is a leading Canadian university for the scope and intensity of its engineering research and industrial partnerships. It is ranked #1 for the number of Canada Research Chairs in Engineering, the most prestigious research funding in the country, and is also first in Québec for the size of its student body and the scope of its research activities. Polytechnique Montréal has laboratories at the cutting edge of technology thanks to funding of nearly a quarter of a billion dollars from the Canada Foundation for Innovation over the past 10 years.

## Research Internship Program

A research internship is a research activity that is an integral part of a visiting student's academic program at the home institution. Each year, Polytechnique's research units welcome more than 250 students from other universities wishing to put into practice the technical and scientific knowledge acquired in their studies. The research conducted is supervised by a professor of Polytechnique and is always related to needs expressed by society or companies, and can be made in laboratories or *in situ*.

## Duration

The recommended duration of the internship is a minimum of 4 months, usually taking place between May and September 2014. Other duration or period can be negotiated to suit your university schedule.

## Financial Arrangement

- Tuition fee waiver for the duration of the internship;
- Free transportation from the airport to your place of residence upon your arrival;
- Two packages available (4 months maximum): 1) Free on-campus accommodation (value of \$600 CAD per month) and weekly allowance of \$100; OR 2) Find your own apartment and get a monthly allowance of \$1000 CAD.

## Eligibility Criteria

- Being enrolled in an university partner of Polytechnique Montréal;
- Having completed at least two years of an engineering undergraduate program;
- Meet the specific skills required by the supervisor if any;
- Being fluent in French or in English (no language proficiency test is required).

## Required Documents for Application (in French or in English)

- Letter of motivation (please include the choice of your research project (see list of projects next page), explain why you are interested in working on this project and highlight your skills in respect to the project);
- Curriculum vitae (CV);
- Copy of your most recent academic transcript;
- Sections A, B, C, D, E & F of the attached specification sheet must be completed.

## Application Deadline

All documents must be sent electronically by **December 10, 2013** to the International Relations Office of Polytechnique Montréal: [brin@polymtl.ca](mailto:brin@polymtl.ca). Please specify in the subject "2014 Summer Research Internship Program".

## Announcement

The results will be announced in January 2014 to each candidate. Selected candidates will receive a letter of invitation and will have to apply for a Work Permit at the Canadian Visa office that serves the area they live in.

## Additional Information

You can count on the support of the Office of International Relations and the Office of International Students to make your stay most enjoyable. You can also get further information on Montreal: [www.tourismemontreal.org/MontrealTV](http://www.tourismemontreal.org/MontrealTV). With all its summer festivals, Montréal is a city that you will love to discover!

**For any questions regarding your application, please contact:**

Nathalie PELLETIER (Ms.), Senior Advisor, International Relations Office ■ [nathalie-m.pelletier@polymtl.ca](mailto:nathalie-m.pelletier@polymtl.ca)

## LIST OF RESEARCH PROJECTS

Click on numbers to access project description

### Aerospace and/or Mechanical Engineering (#1 to #3)

- 1 3D printing of nanocomposite materials for mechanical Microsystems
- 2 Bioinspired Passively Morphing Wing Structure
- 3 High Performance Composites Manufacturing for the Aerospace Industry

### Biomedical Engineering (#4 to #7)

- 4 Development of a real-time motion compensation system of tracked instruments during medical procedures
- 5 Building RF coils for imaging the brain of small animals
- 6 Studying features of the brain using ultra-high field MRI
- 7 Developing image processing methods for MRI data

### Chemical Engineering (#8 to #9)

- 8 Photochemical Surface Engineering of Various Substrate Materials
- 9 Carbon nanotubes and graphene electrodes for organic thin film transistors
- 10 Conducting polymers thin films for bioelectronic devices
- 11 Organic electrochemical transistors with micelle forming electrolytes
- 12 Organic Electrochemical Transistors for Bioelectronic Applications

### Civil, Geological and Mining Engineering (#10)

- 13 Design of a Low-Cost Weather Station For Urban Micrometeorology Applications

### Computer and Software Engineering (#11)

- 14 Radiation-tolerant FPGA architectures

### Physics Engineering and/or Materials Science (#12 to #14)

- 15 Synthesis and characterization of mechanical, electrical and thermal properties of thermoelectric alloys based on Mg<sub>2</sub>Si
- 16 2D monolayers of transition metal dichalcogenides : determination of the band structures using optical transitions and selection rules
- 17 A promising qubit for quantum computation: excitons bound to small molecules embedded in semiconductors.

## ADDITIONAL AREAS OF EXPERTISE

### You didn't find what you were looking for?

- Browse our professors' directory by area of expertise: [www.polymtl.ca/recherche/rc/en/expertises/](http://www.polymtl.ca/recherche/rc/en/expertises/)
- Submit the area of expertise you would like to work on and provide the names of 2-3 professors working in this field.
- Explain in your letter of motivation why you would like to do a research internship in this area.
- The International Relations Office will try to find the appropriate match for you!

### Here are some ideas:

- Civil Engineering
- Structural Engineering
- Hydrology
- Mining and Mineral Processing
- Environmental Engineering
- Industrial Engineering
- Design and Manufacturing
- Chemical Engineering
- Biomedical Engineering
- Materials Science and Technology
- Polymers Chemistry
- Mechanical Engineering
- Fluid Mechanics
- Computer and Software Engineering
- Fuel and Energy Technology
- Nuclear Engineering
- Electric and Electronic Engineering
- Robotics
- Information Technology
- Artificial Intelligence
- Applied Mathematics
- Geophysics





Queensland University of Technology  
Science and Engineering Faculty  
Brisbane Australia

# Winter Research Internship Program 2014

Considering your options for  
gaining international experience?

## Hokkaido University, Japan



Hokkaido University is one of Japan's elite Imperial universities with a long tradition of teaching and research excellence.

As a valued partner of QUT's Science and Engineering Faculty, Hokkaido University is inviting applications from undergraduate or graduate engineering, science and IT students seeking to undertake a research internship, from **late November 2014 to mid-February 2015**.

Japanese language proficiency is not mandatory, as supervision is provided in English.

Research internships of up to three months' duration may be undertaken in one of the following schools:

- Graduate School of Engineering
- Graduate School of Information Science and Technology
- Graduate School of Chemical Sciences and Engineering

Hokkaido University provides funding support of JPY 100 000 per month (approx. AUD 1000) to two QUT Science and Engineering students. Additional internship places may be available on a self-funded basis.

Interested students are advised to nominate 3 potential HU supervisors from the relevant Graduate Schools listed above prior to lodging an application.

Applications must include a cover letter, copy of academic transcripts and your CV.

Applications to be submitted by 6 June 2014.

[More information](#)

email [leonard.fitzpatrick@qut.edu.au](mailto:leonard.fitzpatrick@qut.edu.au)



Faculty of Construction  
and Environment

建設及環境學院

FCE

[www.polyu.edu.hk/fce](http://www.polyu.edu.hk/fce)



Department of Building and Real  
Estate

建築及房地產學系

Department of Building Services  
Engineering

屋宇設備工程學系

Department of Civil and  
Environmental Engineering

土木及環境工程學系

Department of Land Surveying and  
Geo-Informatics

土地測量及地理資訊學系



### Areas of study

- Building engineering and management, building services engineering, building technology and management, civil engineering, construction and real estate, construction law and dispute resolution, environmental and occupational safety and health, environment and sustainable development, environmental management and engineering, facility management, fire and safety engineering, geomatics, international real estate, project management, property management, surveying and sustainable urban development.
- Almost all of its undergraduate programmes are formally recognized by professional bodies.

### Features

- FCE, the only one of its kind in Hong Kong, concentrates on preparing graduates for a wide range of professions in the construction industry.
- PolyU is ranked 16th in the discipline of Civil and Structural Engineering in the QS World University Rankings by Subject 2013; and 1st in the world in terms of the two objective research performance indicators—citations per paper and the H-index which measures the scientific productivity of its researchers and the apparent scientific impact of its research.

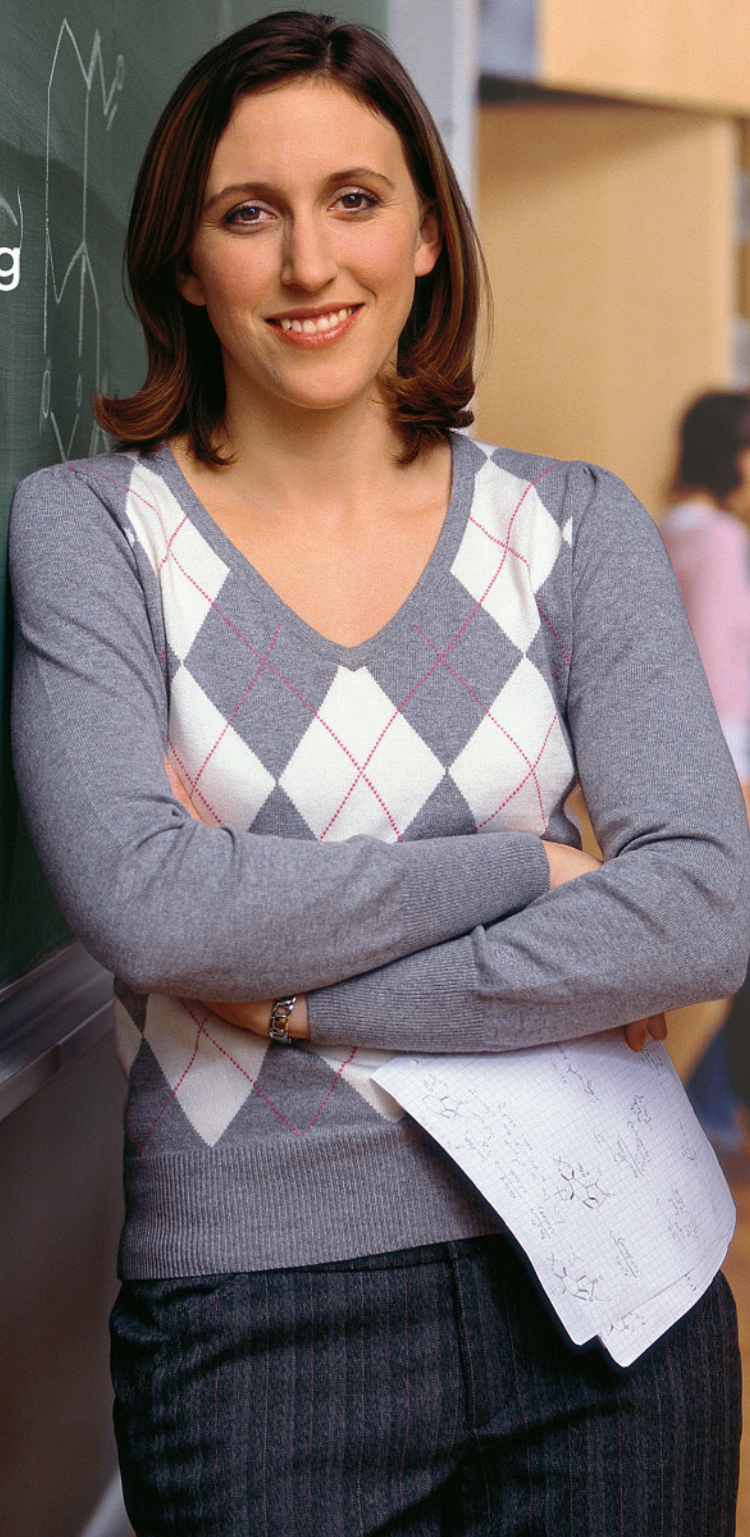
### Research strengths

- FCE's researchers have been active in applying their expertise and research findings to solve challenging practical problems, contributing to the development of industry and society. Examples include the application of the Mega-Structure Diagnostic and Prognostic System to monitor the structural health of the Canton Tower; the formulation of energy saving strategies for Hong Kong's International Commerce Centre (ICC) which help save about 15% of its total energy consumption; the Public Transport Enquiry Service (PTES) system co-developed with the Transport Department of the Hong Kong SAR Government; and the advanced Virtual Prototyping Technology that has been adopted by major construction companies in Hong Kong.



**"I'm ambitious about chemistry, so studying in Germany was a natural reaction."**

Sally Collins, graduate in chemistry from Imperial College London, and currently a PhD student at the Technische Universität München.



[www.study-in.de](http://www.study-in.de)

**Study in  
Germany**



**Land of Ideas**





# ENVIRONMENTAL CONSTRUCTION ENGINEERING

## URBAN WATER (INFRASTRUCTURE & ENVIRONMENT)

### THE INTERNATIONAL SEMESTERS

The International Semesters in Environmental Construction Engineering are two 5-month (30 ECTS) programmes, each comprising courses and a multidisciplinary project. The two semesters can be taken individually or jointly. All curriculum activities are conducted in English and are dealt with in an international perspective. The latest know-how and state-of-the-art computer models are applied in an always practical engineering approach to the complex environmental problems.

### ADMISSION REQUIREMENTS

The semesters are intended for international and Danish students having passed at least two years of a Civil and/or Structural Engineering programme. For the Wastewater Engineering semester, a course in basic Hydraulics is a prerequisite. For the Water Supply Engineering semester, both knowledge of basic Geology and Hydraulics is a prerequisite. Proficiency in English is required (TOEFL-test, score 550, or equivalent).

### AUTUMN SEMESTER: WASTEWATER ENGINEERING

Enrolled in the Wastewater Engineering semester you will learn how to analyse and design the complex infrastructures for wastewater management, including design and optimization of sewer systems, design of wastewater treatment plants, estimation of impact on receiving water bodies and much more.

### SPRING SEMESTER: WATER SUPPLY ENGINEERING

Enrolled in the Water Supply Engineering semester you will learn about methods for identification, assessment and withdrawal of ground water resources, and how water can be treated to obtain the desired potable water quality. You will also learn to design the distribution network, and how public planning and management procedures can enable a safe and secure water supply system.

### LEARNING ENVIRONMENT

A semester comprises lectures, assignments and laboratory work prevailing the first quarter, and team work on a large multidisciplinary project in the second quarter. The multidisciplinary project serves to train the application of theories from the courses through the problem analysis and proposal of solutions to a real-life environmental project in its entity. A course in Co-operation, Learning and Project Work enables you to perform efficiently and methodically in a project team.

### BACHELOR'S PROJECT

Following one or both of the Environmental Construction Engineering semesters, you can apply to conduct a 30 ECTS-credit Bachelor's Project.

### STUDY PERIOD AND APPLICATION

The Wastewater Engineering semester runs from August through December. Application deadline is 1 May. The Water Supply Engineering semester runs from the end of January through June. Application deadline is 1 November. Applications will be continuously assessed. A maximum of 20 international students is accommodated.

### FIND OUT MORE

Visit our website at [www.iha.dk](http://www.iha.dk) or contact the International Officer Ms. Merete Christensen. E-mail: [mc@iha.dk](mailto:mc@iha.dk)

Aarhus University School of Engineering, Dalgas Avenue 2,  
8000 Aarhus C, Denmark, +45 4189 3000





# EMBEDDED DIGITAL SIGNAL PROCESSING

## THE INTERNATIONAL SEMESTERS

Have you ever wondered how it is possible to put a two-hour movie and five channels of sound on a single DVD? And what about your favourite 50Mb track of music taking up only 3-4Mb on the mp3-player? All modern handling of digital audio and video is based on coding by compression. Raw data is processed in a way so that only the important pieces are left for storage and/or transmission. Clever algorithms taking the human sensory system (hearing and vision) into account are designed to accomplish the data reduction.

This course is about real-time compression and coding of music, and we take a starting point in the actual techniques used in DVD encoding. Understanding the fundamentals of the human hearing and setting up algorithms capable of removing all redundant information from a music signal. Step one is to build a software framework realising a fully functional music encoder, and step two is to implement the framework in digital signal processor hardware to enable real-time processing of a music wave file.

In the end we can make experiments using subjective listening tests showing the encoding compromise between perceived quality and signal bit rate. How far can we go in removing information from the signal before it becomes audible? And how much can be removed before we don't like to listen to the music anymore?

Most of the courses are also intended for Danish students, but all curriculum activities are conducted in English and are dealt with in an international perspective. The latest know-how and state-of-the-art HW/SW are available and a practical engineering approach to the complex systems is in strong focus.

## ADMISSION REQUIREMENTS

The semesters are intended for international and Danish students in the final year of their Bachelor studies or at a similar

educational level of a digital electronics/signal processing programme. More specifically, basic electronics skills, basic signal processing skills and basic programming skills (e.g. C or C++) are considered a prerequisite for attending this study. Proficiency in English is required (TOEFL-test, score 550, or equivalent).

## COURSES ON OFFER INCLUDE

### Autumn Semester, mid August (30 ECTS)

- Cooperation, Learning and Project Work (2.5 ECTS)
- Cross-Cultural Understanding (2.5 ECTS)
- Embedded Computer Architecture (5 ECTS)
- User Interfaces for Embedded Systems (5 ECTS)
- Embedded Signal Processing (5 ECTS)
- Multidisciplinary Project to Train the Application of Theory from the DSP Courses (10 ECTS)

It is possible to take only the autumn semester. Exams after the first semester must be passed with satisfactory results in order to be able to take the second semester.

### Spring Semester, end of January (30 ECTS)

- Digital Image Processing (5 ECTS)
- Applied Micro-Controller Systems (5 ECTS)
- Bachelor's Project (20 ECTS)

## STUDY PERIOD AND APPLICATION

Study period is from mid August to end of June. Deadline for application is 1 May. A maximum of 20 international students is accommodated.

## FIND OUT MORE

Visit our website at [www.ih.a.dk](http://www.ih.a.dk) or contact the International Officer Ms. Merete Christensen. E-mail: [mc@ih.a.dk](mailto:mc@ih.a.dk)

Aarhus University School of Engineering, Dalgas Avenue 2,  
8000 Aarhus C, Denmark, +45 4189 3000.



# APPLIED APP DEVELOPMENT

## THE INTERNATIONAL SEMESTERS

In January 2010 Gartner Research forecasted that consumers will spend \$6.2 billion in 2010 in mobile application stores while advertising revenue is expected to generate \$ 0.6 billion worldwide. Gartner forecasts worldwide downloads in mobile application stores to surpass 21.6 billion by 2013. Application development for mobile platforms is a very rapidly growing area and this international programme focuses on development for some of these platforms (Android and Windows phone 7).

Mobile platforms are not just being used by consumers. One example is a system used in ambulances for making patients more relaxed – it is operated by a mobile phone. Mobile phones are also being used as front-end devices for applications used by windmill repairmen.

Most of the courses are also intended for Danish students, but all curriculum activities are conducted in English and are dealt with in an international perspective. The latest know-how and state-of-the-art HW/SW are available and a practical engineering approach to the complex systems is in strong focus.

## ADMISSION REQUIREMENTS

The semesters are intended for international and Danish students in the final year of their Bachelor studies or at a similar educational level of an ICT programme.

More specifically, basic electronics skills and basic programming skills (e.g. C, C++, C# or JAVA) are considered a prerequisite for attending this study.

Proficiency in English is required (TOEFL-test, score 550, or equivalent).

## COURSES ON OFFER INCLUDE

### Autumn Semester, mid August (30 ECTS)

- Cooperation, Learning and Project Work (2.5 ECTS)
- Cross-Cultural Understanding (2.5 ECTS)
- Embedded Computer Architecture (5 ECTS)
- Windows Embedded (5 ECTS)
- Smartphone Applications (5 ECTS)
- Multidisciplinary Project to Train the Application of Theory from the Applied App Development Courses (10 ECTS)

It is possible to take only the autumn semester.

Exams after the first semester must be passed with satisfactory results in order to be able to take the second semester.

### Spring Semester, end of January (30 ECTS)

- Applied Micro-Controller Systems (5 ECTS)
- Entrepreneurship and Innovation in Computing (5 ECTS)
- Bachelor's Project (20 ECTS)

## STUDY PERIOD AND APPLICATION

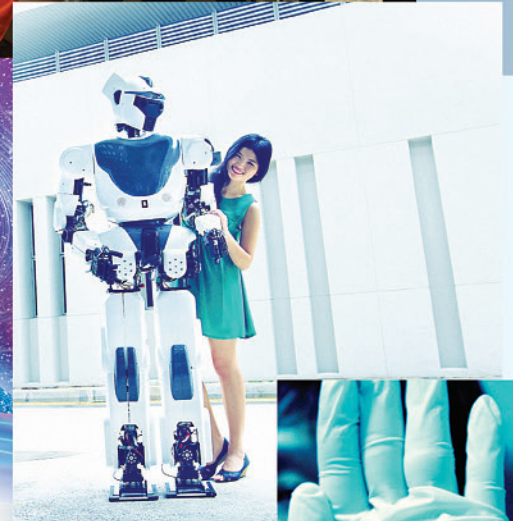
Study period is from mid August to end of June. Deadline for application is 1 May. A maximum of 20 international students is accommodated.

## FIND OUT MORE

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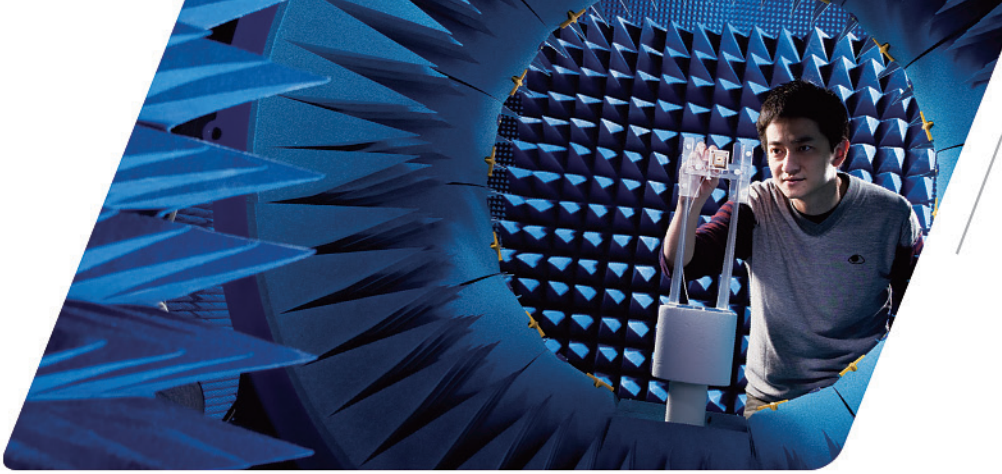




# NTU. One of the world's fastest-rising universities

A young and research-intensive university in Singapore, Nanyang Technological University (NTU) is one of the fastest-rising universities in the world. Helmed by Professor Bertil Andersson, winner of the Wilhelm Exner Medal, an honour bestowed on the world's best scientists, NTU is a melting pot of international award-winning scientists, young talents and eminent global partners. With its state-of-the-art facilities, NTU is building on its interdisciplinary strengths with cutting-edge research that improves lives and shapes the future. Come 2013, NTU will offer medicine in a new school jointly set up with Imperial College London.





The State Key Laboratory of Millimeter Waves, the first such facility in Hong Kong, researches the principal theories and applications of millimeter waves, utilising the synergy of CityU's acclaimed research strengths in millimeter wave circuit designs, antenna technologies and computational electromagnetics.



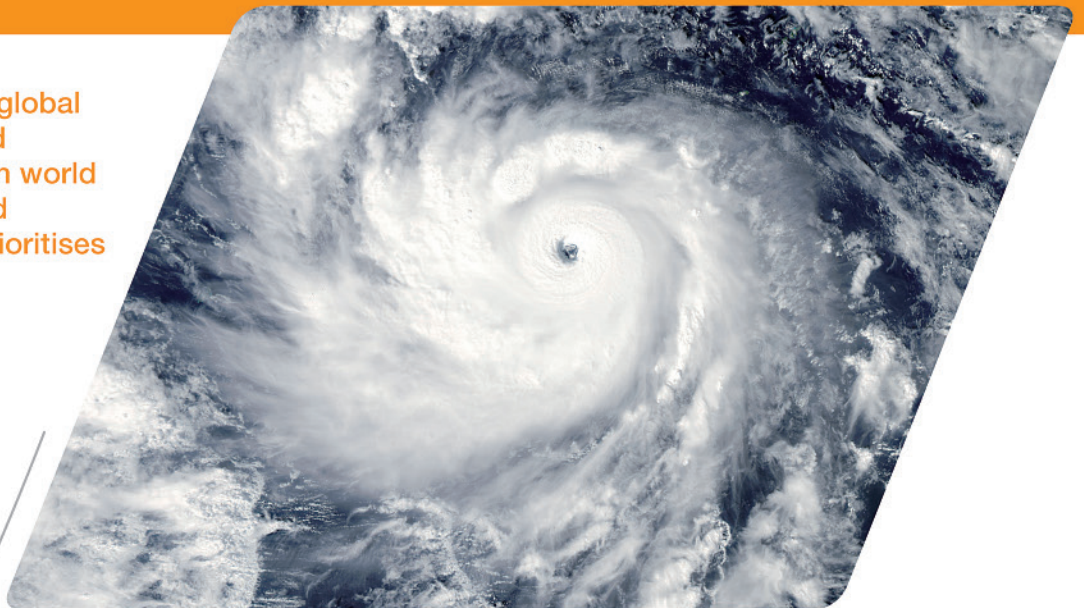
T\_Visionarium is a fully interactive 3D televisual installation that allows viewers to explore a multitude of narratives within a unique 360 degree space.

# Discover & Innovate @ CityU

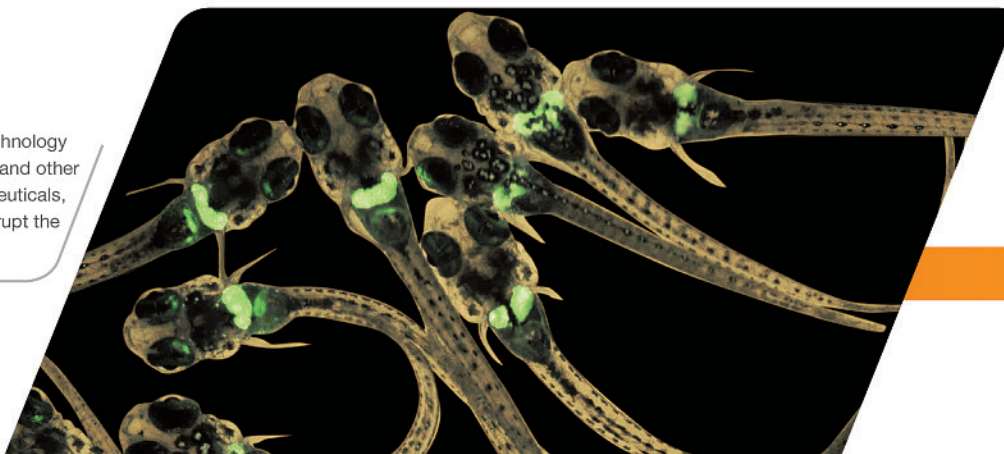
Transformational learning

CityU aspires to become a leading global university, excelling in research and professional education. It is rising in world university rankings with an enriched inter-disciplinary curriculum that prioritises discovery and innovation.

Climate experts in the new School of Energy and Environment deploy state-of-the-art computer modelling technology to track monsoon and typhoon behaviour in the region.



Ground-breaking transgenic fish technology rapidly detects synthetic chemicals and other substances found in food, pharmaceuticals, cosmetics and plastics that can disrupt the body's hormonal system.





# Studying in English at QUT partner institutions

## English language-based institutions (undergraduate and/or graduate level):

Bilkent University, Middle East Technical University and Özyeğin University	Turkey
Korea Advanced Institute of Science and Technology	South Korea
TU Denmark (all masters in English)	Denmark
Chalmers University of Technology (all masters in English)	Sweden

## Specific programs taught wholly in English or with a wide choice of English-taught units - examples:

Automotive Engineering	Politecnico di Torino, Italy Chalmers University of Technology, Sweden
Aerospace Engineering	TU Delft, Netherlands Universidad Carlos III, Spain KTH Royal Institute of Technology, Sweden
Computer Science / Engineering	Politecnico di Torino, Italy Warsaw University of Technology, Poland
Electronic Engineering	Politecnico di Torino, Italy
Mechanical Engineering	Politecnico di Torino, Italy Karlsruhe Institute of Technology, Germany
Metallurgical Engineering	RWTH Aachen
Physics of Complex Systems	Politecnico di Torino, Italy
Mechatronic Engineering	Politecnico di Torino, Italy
Civil Engineering	Politecnico di Milano, Italy Warsaw University of Technology, Poland
Materials Engineering and Nanotechnology	Politecnico di Milano, Italy
Software Engineering of Distributed Systems	KTH Royal Institute of Technology, Sweden
Automation and Control Engineering	Politecnico di Milano, Italy
Environmental and Geomatic Engineering	Politecnico di Milano, Italy
Telecommunications Engineering	Politecnico di Torino, Italy
Biomedical Engineering	Universidad Carlos III, Spain
Energy / Power Engineering	Warsaw University of Technology, Poland Universidad Carlos III, Spain TU Denmark
Systems, Control and Robotics	KTH Royal Institute of Technology, Sweden
Photonics Engineering	TU Denmark Warsaw University of Technology, Poland
Mathematical Modelling and Computation	TU Denmark Karlsruhe Institute of Technology, Germany
Materials Engineering	Universidad Politécnica de Madrid, Spain
Urban /Infrastructure Planning	Politecnico di Milano, Italy FH Frankfurt, Germany University of Stuttgart, Germany
Air Quality Control, Solid Waste and Waste-water Process Engineering	University of Stuttgart
Computational Mechanics of Materials and Structures	University of Stuttgart
Information Technology	University of Stuttgart
Applied Physics	Chalmers University of Technology, Sweden
Innovative and Sustainable Chemical Engineering	Chalmers University of Technology, Sweden

# Short-term programs

A wide range of short term programs are offered through partner and non-partner universities.

- Latin American Studies Program
- Latin America in Perspective
- Mérida Summer Program
  - Spanish Language + Mexican Culture or Volunteer Work Project
- Biodiversity in Perú (AIM)
  - Innovation in Information Technology
  - Finding Nano
  - Engineering and Management across cultures
- European Summer University on Logistics, Mobility and Sustainability
- International Summer School GeKo 2013 (Land Management and Geo-processing)
- Winter University (German language and culture), January
- Intensive German (6 week program), March and September
- Automation and Simulation
- Automotive and Mobility Studies
- Steel Design
- Water Resources Management
- Learn German - Experience Aachen, September
- Advances in Nonlinear Structural Mechanics – Modelling and Finite Element*
- Simulation of Isotropic, Composite and Smart Structures - for Master and PhD students.*
- University of Cambridge 2014 Science Summer Program (AIM)
- IT: Big data and social network analysis (AIM)
- Summer Program - Renewable Energies + Intensive French Language
- Managing a Multicultural World
- Engineering for Health International Summer School
- Summer School in Micro and Nanotechnologies
- Aalto University Summer School on Transportation
- Bilkent University Summer School
- International Summer School
- DTU Summer School:
  - Arctic Technology
  - Chemical & Biochemical Engineering
  - Telecommunication
  - Danish Language and Culture Course

Universidad de La Sabana	Colombia
Universidad Iberoamericana	Mexico
Tecnológico de Monterrey	
Universidad San Ignacio de Loyola	Perú
TU Munich	Germany
FH Frankfurt	
University of Stuttgart	
TU Darmstadt	
RWTH Aachen	
University of Cambridge	UK
Michigan State University	USA
Institut catholique d'arts et métiers	France
Télécom Bretagne	
École Centrale Paris	
Grenoble Institute of Technology	
Aalto University	Finland
Bilkent University	Turkey
Korea Advanced Institute of Science and Technology	South Korea
Danish Technical University	Denmark

## Partner universities in top 100 under 50 years of age

QUT- ranked the top university in Australia under 50 years of age.

Do you want to go on exchange to another dynamic and innovative partner university ranked in the top 100 of those

Nanyang Technological University	Singapore
Bilkent University	Turkey
Bielefeld University	Germany
Hong Kong Polytechnic University	China
Korea Advanced Institute of Science and Technology	South Korea
University of Strathclyde	United Kingdom
Aston University	United Kingdom
Linköping University	Sweden

### Linköping University, Sweden

#### Examples of units available in English

Biomedical Materials	Biomedical Modelling and Simulation
Traffic Planning and Simulation	Contemporary Sensor Systems
Traffic Demand Modelling	Medical Imaging
Physical Metallurgy	Computer Vision
Classical Electrodynamics	Modelling and Animation
Optoelectronics	Information and Visualisation
Thin Film Physics	Computer-Aided Design of Electronics
Ecological Applications in Agriculture, Forestry and Fisheries	Data Mining - Clustering and Association Analysis



## Tips and frequently asked questions

### Am I eligible to apply to go on exchange?

To be eligible for the exchange program you must:

- be currently enrolled
- have a GPA of at least 4.5
- be able to be financially self-sufficient for the exchange time. You'll need to pay for your own travel and living expenses.

Undergraduate students must be completing at least 96 credit points at the time of applying.

Graduate students must be completing at least 48 credit points at the time of applying.

International students are encouraged to apply for exchange unless in their final semester. International students are ineligible to undertake exchange studies in their home country.

### If I'm interested in an internship through one of the universities or organisations listed in this guide, what will I need to do or be aware of?

- internships may be paid or unpaid
- typical internship duration is a minimum of 3 months.
- internships within a university lab environment are an excellent option where coursework based options in English are limited, where supervision for a project can be provided in English
- prepare your CV, academic transcript and motivation letter (outlining the project area / topic you are interested in and the preferred timeframe for the internship)
- consult with your course / unit co-ordinator and if planning to seek credit towards a WIL unit, consult the Science and Engineering WIL team

### For more detailed information on the process of applying for exchange, funding opportunities and advice on preparing to study overseas, you are encouraged to:

- Attend an [Exchange 101](#) session organised by QUT's Study Abroad and Exchange team
- Enrol in this Blackboard community: [QUT Study Abroad and Exchange](#)
- Like this Facebook page: [www.facebook.com/qutstudentmobility](http://www.facebook.com/qutstudentmobility)
- Talk to a returned exchange student at A Block, Level 1, GP Campus
- Visit this website: <http://www.student.qut.edu.au/studying/student-exchange>