



UQ-KU Project

九州大学 研究教育交流拠点

UQ-KU Project Newsletter

July 2017

THE UNIVERSITY OF QUEENSLAND – KYUSHU UNIVERSITY OCEANIA PROJECT

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The University of Queensland - Japan Program for Industry Experience (UQ-JPIE)

Fifteen undergraduate Mechanical and Mechatronics Engineering students from the University of Queensland had experience of a lifetime as part of the UQ-Japan Program for Industry Experience (UQ-JPIE).

This program, also part of the New Colombo Plan, an initiative of the Australian Government was facilitated by the UQ-KU Oceania Project.

This was a comprehensive and unique two week program that consisted of 15 lectures from world leading, Kyushu University academics, a lecture on Japanese business culture and visits to some of the top Japanese companies that have their headquarters or a major presence in the Kyushu region. The UQ students visited the following world renowned Japanese companies: Yaskawa Electric Corporation, Nippon Steel & Sumitomo Metal Corporation, Hitachi Heavy Industries, Toyota Motor Corporation Kyushu Inc., and TOTO Ltd.

At the opening ceremony of the UQ-JPIE, greetings from the President of Kyushu University, Professor Chiharu Kubo and Mr Ian Brazier, the Australian

Consul General of Fukuoka, provided a very warm welcome to not only the Mechanical and Mechatronics Engineering students, but a fellow University of Queensland student from the Department of International Studies (Ms Kate Goodfruit, also a New Colombo Fellow).

The attendees also had the pleasure of being addressed by Professor Hiroshi Takamatsu, the Dean of the Faculty of Engineering and Professor Yoshio Hisaeda, the Vice Dean of the Faculty of Engineering.

At a later welcome function, Executive Vice President, Professor Sanae Itoh and third year Mechanical and Aerospace Engineering student, Mr Daiki Tsuji extended the warm welcome to all of the students from the University of Queensland.



Professor Chiharu Kubo, President of Kyushu University, welcomes the visiting students from the University of Queensland.



The UQ-JPIE Opening Ceremony

The UQ students were also very fortunate to be paired with the Kyushu University students that will be travelling to the University of Queensland for the third iteration of the Q²PEC. This wonderful initiative allowed for many friendships to be made and the UQ students were extremely grateful for the kindness and generosity of the 'Kudai Buddies'.

The University of Queensland Japanese Program for Industry Experience was incredibly successful and has had a very positive and lasting impact on the students from UQ. Profound thanks must go to Professor John Chen and his team from the International Education Support Center for Engineering at Kyushu University and his team, in particular Ms Saori Maruno and Ms Yumi Mizutani. Profound thanks must also go to the Kyushu University Academics, who gave up their time to deliver such interesting lectures during the UQ-JPIE visit and to all of the support staff that made this trip such a success.



Kyushu University Q²PEC and University of Queensland students get together for the first time

UNIVERSITY OF QUEENSLAND – JAPAN PROGRAM FOR INDUSTRY EXPERIENCE UQ-JPIE

The “New Colombo mobility plan: short study trip in Japan” was an excellent program and I would like to express my deepest gratitude to those involved in making this wonderful experience happen. Prior to the trip, I had several expectations of the program which were to observe practical applications of Japanese manufacturing, learn about Japanese culture and broaden my experience and knowledge of Japanese industry. After completing the NCP trip to Japan, I can gladly say that my expectations were exceeded in all respects.

The program involved a series of lectures delivered by lecturers and researchers working at Kyushu University, as well as several industry visits to local manufacturers. The lectures were highly engaging and we learned much about Japanese history, the economy and some of the major cultural factors that have shaped Japanese business and industry. This was a key highlight for me, as I am interested in the Japanese culture. It was also interesting to gain historical context of the industry prior to visiting the manufacturing plants, specifically Nippon Steel and Toyota. In addition to these lectures, we were also fortunate to see some of the cutting-edge research projects happening at Kyushu University. This included research into steel manufacturing, a tour of their electron microscope and their state of the art hydrogen fuel cell which is used to store power at the university. It was great to see industry and academia working closely together at KU and there was a strong sense of collaboration in all areas of research.



We were also fortunate to meet many Japanese students studying a range of engineering majors. It was very interesting to learn about university in Japan, as well as their future career aspirations and interests. We socialised outside of the program and learned much about Japanese culture and saw many of Kyushu’s best sights. A highlight of the program was the day trip to Itoshima with the Japanese students during which we explored the coast and saw many amazing sights.

The industry visits were incredible, with my main highlights being Nippon Steel and Toyota Kyushu. During our university studies, we have learned about steel manufacturing and studied the science behind the process. However, as we have very limited manufacturing in Australia we have been unable to witness it in person. To see the enormous scale of the production at Nippon Steel was incredibly impressive. Similarly, seeing the seamless integration of automation and robotics at Toyota Kyushu was an amazing example of Japanese ingenuity. To witness manufacturing on such a massive scale is not possible in Australia. Thanks to the New Colombo Plan we have seen these industries operating with our own eyes. This is incredibly effective in providing real-world context to the content we learn in university and I believe that my engineering ability has increased significantly as a result of the program.

Again, I would like to express my gratitude to the New Colombo Plan, Kyushu University and the University of Queensland for this incredible opportunity. This program has given us the opportunity to gain first-hand experience in the Japanese manufacturing industry. It also made us appreciate the importance of value addition and automation in Japanese industry. We learned much about Japanese culture and made many friends along the way. This program has given me an amazing insight into Japanese industry and I hope that my career may lead me back to Kyushu in the future.

*Mr Jeffery Barret
School of Mechanical and Mining Engineering
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UNIVERSITY OF QUEENSLAND – JAPAN PROGRAM FOR INDUSTRY EXPERIENCE UQ-JPIE

From July 1st-16th of 2017, 15 students from the University of Queensland, Australia, were granted the opportunity of visiting Japan on a short term exchange under a collaborative initiative of the Australian Government and Kyushu University. The Japan Program for Industry Experience (JPIE) was designed to develop and strengthen cross-cultural relations between Australia and Japan, particularly within the manufacturing and industry sectors. I was one of these inexplicably fortunate students in attendance of this trip, and have had my expectations met and exceeded by the program. Despite having certain objectives and ambitions prior to leaving Australia, nothing could have readied me for the personal development that would ensue as a result of being exposed to the richness of Japanese culture, industry and society.

The trip began with us being welcomed into Kyushu University by both academics and students, who prepared a welcoming ceremony and celebration event for us upon our arrival. Over the course of the next two weeks, we were given the opportunity to form close relationships with these people, who taught us so much about the Japanese culture and way of life. These interpersonal experiences taught us by example, how pivotal Japanese values are to the development of their society, and how these cultural traits underpin and strengthen societal ambitions.

Something I was personally encouraged by during my stay in Japan, was the drive and passion of the nation's younger generation. While studying at Kyushu University, we were buddied with incredible students who were also studying in the engineering and energy sectors. Through the development of these friendships, we were able to engage various student societies and learn about what it is that truly motivates this upcoming generation. Something I found very encouraging, was that the people I met were not driven by the potential of individual glorification or recognition, but instead a desire to advance their society and nation as a whole, so as to improve the quality of life for those around them. These students will be visiting Australia in August for 5 weeks, and I know I speak on behalf of all the Australian JPIE students when I say we are utterly thrilled to be able to soon return their tremendous hospitality to us, and to teach them about our own culture in Australia.



Over the course of the two weeks in Kyushu, we attended a variety of different lectures and industry visits that educated us enormously on the economic prospects of Japan, and how the engineering and manufacturing industry is pivotal to securing the country's future. For me, the scale and prowess of the manufacturing industry was exemplified by our visit to Mitsubishi Heavy Industries. I am so thankful of the opportunity to visit industries like this, as in Australia, we have nothing that is scalable or comparable to these global manufacturing institutes. I believe gaining a practical experience and understanding of how technologies and products are developed is pivotal to my learning as a student, and is something I can take back to Australia that will additionally benefit my fellow peers as I collaborate with them.

The JPIE program has taught me so much about the international relationships critical to both the Japanese and Australian economy, and how I, as an upcoming engineer, will be responsible for securing the future of such economies. The friendships I have developed within the JPIE Australian student body and with students at Kyushu University have been invaluable to my personal development, and additionally to my engineering career. I am so excited to work together with these people again in the future. I am thrilled at the prospect of what we will be able to achieve by working together, nation alongside nation.

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UNIVERSITY OF QUEENSLAND – JAPAN PROGRAM FOR INDUSTRY EXPERIENCE UQ-JPIE

Going into the JPIE program, I set a high standard of learning outcomes. The program not only met my expectations, but in fact, went far beyond anything I could ever fathom. Two intense weeks of content delivery from exceptional industry pioneers, coupled with industry visits to the world's greatest manufacturing companies, not only taught me new and insightful concepts but also brought out my engineering fascination. Despite the wide range of engineering fields – between robotics, hydrogen fuel cells and ship building – I was amazed to find that every single lecture, site visit, and lab tour excited me. The program has outdone expectations by providing students stimulus into all the critical mechanical engineering fields – mechatronics, aerospace, nuclear, material science and manufacturing. I have never been able to appreciate the sheer interconnectedness between all these areas of engineering and technology. The manner in which Japan is self-sufficient, with companies integrating their respective technologies to assist each other, is nothing short of amazing.

There are in fact three key terms that encapsulate the work culture in the manufacturing industry. Keiretsu employs the idea of synergy on a large scale within the Japanese industry; instead of competing, these companies achieve



high levels of cohesion and stay true to Japan's communal outlook. Kanban focuses on maximising efficiency and Kaizen looks at summing small incremental changes to a large improvement.

Furthermore, I have a whole new appreciation for the communal outlook imbedded within Japanese culture. This familial approach was clearly apparent in every industry we visited; starkly contrasting to Australia's individualistic approach. Watching a vastly different work approach provided insights into exactly why Australian companies function well and do not function well at other times. Only a well-structured and intensive cultural immersion can be so successful in allowing a student to rediscover the sheer potential in engineering and to even improve one on a personal level. This brings me to the other major success of the JPIE program; lasting friendship and connections. Take 15 incredibly bright and passionate engineers – all strangers – throw them into a group, have them socialise for 2 weeks straight and from that emerges long lasting friendships. I am incredibly grateful for everything this project has provided and intend to apply all these lessons in my future development as both an engineer and an individual.

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Future: Work Culture



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<http://www.mechmining.uq.edu.au/uq-ku-project>