

Education and research with a focus on the industrial sector

The educational programmes developed by the University of Newcastle, Australia, have been delivered from Singapore, since 2002.

In 2006, University of Newcastle in Singapore (UON Singapore) was established as a wholly-owned entity of the University of Newcastle, Australia. UON Singapore has continued to deliver and expand both full-time and part-time programmes. Strong partnerships with leading local institutions provide UON Singapore's diverse range of local and international students access to a broad variety of professional networks, when they graduate.

Further, UON Singapore's researchers work with world-class organisations in Singapore and beyond, on research projects, research seminars and faculty-specific collaborative projects.

RESEARCH ACTIVITIES AT UON SINGAPORE



Dr Charles Lee

Dr Charles Lee and Dr Kavitha Palaniappan are full-time staff at the University of Newcastle in Singapore, and are lecturers in the Bachelor of Environmental and Occupational Health and Safety (BEnvOHS) programme. They are also actively involved in multi-disciplinary research.



Dr Kavitha Palaniappan

Dr Charles Lee has more than 25 years' experience in environmental research, education and consulting in North America and in countries in the Asia-Pacific. His research activities cover areas including environmental sustainability, environmental waste management, environmental health, and biotechnology solutions for industrial waste treatment.

Dr Lee has research collaborations with institutions and universities in Singapore (A*STAR), China (Chinese Research Academy of Environmental Science) and the US (Stanford University's Center for Sustainable Development and Global Competitiveness). He is frequently invited to review research papers in top-tier journals such as *Bioresource Technology*, *IWA's Water Science and Technology*, and *Environmental Geochemistry and Health*. Dr Lee currently serves as an Associate Editor for the *International Journal of Environmental Pollution and Remediation*.

Dr Kavitha Palaniappan's research activities cover subjects such as the prevalence of psychosocial illnesses and their impacts on society, the economy and country; toxicity of nanomaterials; exposure measurements and hygiene requirements for nano titanium dioxide; exposure to nano silver in mattresses and bedding and their health effects; and associations between seasonal pat-

terns, climate variables and dengue risks in Singapore. She is also a member of the NanOsing Consortium, a multidisciplinary collaboration of prominent leading research and consultancy groups in Singapore, who are dedicated to developing and applying multidisciplinary science for the assessment of the health and environmental risks of nanotechnology in the country.

Current project on the psychosocial well-being of migrant workers

UON Singapore won a research grant from the Singapore Workplace Safety and Health Institute in May 2014 for a project on 'Workplace Safety and Health in the Singapore Construction Industry: Assessing the Nexus between Mental Health and Productivity'. The main objectives of this project are to determine the prevalent rates of mental health illnesses in a representative cross-section of construction workers in Singapore, to estimate the consequences of such illnesses on workers' general health, safety and productivity, and to determine suitable intervention strategies to solve the mental health issues.

Improving the psychological well-being of workers would increase the overall productivity of the construction sector in Singapore, through a decrease in accidents, sick leave and related costs; higher retention of experienced workers; and improvement in worker attitudes and skills. These intervention strategies can be extrapolated to other industrial sectors, as well.



UON Singapore's research team with the Deputy Director of Workplace Safety and Health Institute as well as the Health & Safety Manager, Safety Officers, Subcontractors and Supervisors of the construction company involved in the study.

STUDYING TO BECOME AN ENVIRONMENT, HEALTH AND SAFETY PROFESSIONAL

Mr Brar Govind Singh is a young and energetic individual who takes pride in every new journey that he embarks on. He is currently studying for the BEnvOHS degree, while doing his National Service.

UON BACHELOR OF ENVIRONMENTAL AND OCCUPATIONAL HEALTH AND SAFETY PROGRAMME

The UON Bachelor of Environmental and Occupational Health and Safety (BEnvOHS) degree enjoys a tremendous reputation in Singapore and the Asia-Pacific region. It is the first established undergraduate programme in Environmental, Health and Safety (EHS) offered in Singapore.

More than 1,000 students who have graduated are working in senior positions in key sectors of the government, such as the Ministry of Manpower (MOM) and the National Environment Agency (NEA) as well as in prestigious multinational companies spanning across all the industrial sectors - oil & gas, pharmaceuticals, chemicals, electronics and aerospace.

The main reason for the success of the flagship programme is that it is focused on the industrial sector. All 16 courses covering three disciplines in E, H and S impart crucial knowledge as well as important real-life industrial applications. Concepts learnt in the classes are reinforced with field studies in an industrial setting. This combination of theory and applied industrial knowledge distinguishes UON as a preferred choice for students who are embarking on an EHS career.

The BEnvOHS degree is run by UON Singapore through its leading partner, PSB Academy. Highlights of the degree include:

- Recognition of the degree as a requirement by Singapore's Ministry of Manpower in its qualifying criteria, in applications for the position of a Workplace Safety & Health Officer
- Accredited by the Institution of Occupational Safety and Health (IOSH)
- Established degree offered in Singapore since 2006, that encompasses the disciplines of Environment, Health and Safety (EHS) - making it the first mover in the market.

The BEnvOHS programme runs in Part Time mode, with three intakes a year (in January, May and August).

More information may be obtained from psb-academy.edu.sg/UONBEnvOHS.

Mr Singh is very confident that the qualifications that he will acquire from the UON, especially the BEnvOHS degree, will provide him with a solid foundation to start the journey in the EHS industry.

In his first year of studies at UON Singapore, Mr Singh received the 'Best Undergraduate Performance' Award for obtaining the highest cumulative GPA scores. He topped the cohort and also won the Institution of Occupational Safety and Health Award (IOSH Award). This award is given to the top first year BEnvOHS student, to encourage all students to be actively involved in the EHS profession, besides excelling in their academic pursuits. Both awards were presented at UON Singapore's first Awards and Appreciation Night in 2015.

Mr Singh explains why he chose this particular field of study, the advantages of being a student at UON Singapore, and what he hopes to achieve after completing his degree.

Question: What made you opt for the Bachelor of Environmental and Health and Safety programme? Why did the course interest you?

Answer: Several things come to mind - selecting the programme that excites me; the university that delivers such a programme; its partners in Singapore, its values - especially its engagement; and its vision of 'being a global leader with its commitment to equity and excellence and to creating a better future for its regions through a focus on innovation and impact'.

Selecting the course again can be attributed to many factors - the degree is recognised by MOM; the UON values; and most importantly, the vision. Choosing to pursue this degree really gives me a good feeling - that I have made the right choice.

Q: What made you choose the route provided by a private education institution (instead of a local university), to further your education?

A: What made the choice easier was that UON is the only university that offers a degree programme in Singapore that covers both Environmental and Occupational Health and Safety (EOHS). Another important consideration was that it is accredited by the Institution of Occupational Safety and Health (IOSH) and recognised by MOM.

An appreciation of PSB, with its humble beginnings and its mission of upgrading the knowledge and skills of Singapore's workforce, appealed to my parents. For me, selecting a programme offered by UON in partnership with PSB Academy was an almost immediate decision.



Mr Brar Govind Singh

Q: In what ways has this course added value to your personal development and career opportunities? How has it built your character?

A: My father, who is a Health, Safety, Security and Environment (HSSE) professional with a multinational company, was partly responsible for my selection of this programme. He has instilled this behaviour of always being aware of the situation around us and doing a mental risk assessment. Both the Environmental and Health and Safety fields require one to be aware of the environment, the impact of our activities on all our stakeholders and managing the risk that these activities may impose on the people that may be impacted.

This programme has made me appreciate what my father has always preached to the family. It has made me more aware of the environment, the hazards and the associated risks of the activities around us.

Q: What do you think is the major benefit in pursuing this course?

A: The degree provides me with the appreciation and the need to be aware of our surroundings and the impact of our activities on all our stakeholders and other people. The degree also provides me with the knowledge and the tools to make a difference both in terms of our environment as well as the health and safety of all the interested parties.

Q: What do you think will have the greatest impact on the industry in the near future and how can you and this course contribute to the industry?

A: The importance of information is paramount - people need to be aware of the impact of their activities on the surroundings and their neighbours, how they can be good citizens, and how companies can be good corporate citizens by protecting both the environment and the health and safety of the people that are involved in their activities.

Q: How do you manage your time? Any tips or words of wisdom for new students?

A: Prioritising goes a long way - focusing and setting objectives are key. These objectives are time-based, short-term and task-orientated. This allows me to achieve my goals that I set for the week, month and module. Sometimes, I would set timers on my internet usage to limit social networking to 15 minutes a day. When those 15 minutes are up, the sites would be blocked.

Q: How do you stay inspired every day as a student? What do you do to make you study hard, stay motivated etc?

A: If you wait for inspiration to start, you will not get much done. Inspiration does not come every day and it is very inconsistent. Throughout the degree programme, I had to discipline myself to stick to my timetable in order to get my work done. I have tried many things and

am always willing to change my approach if I realise that it is not working. For example, to ensure that I remain focused on my objectives, I used to write inspirational quotes and post them in strategic locations in my room, to bring me back on track and to get myself focused, whenever I start to deviate from my objectives.

Q: Was there anyone who motivated you through the challenges of completing the course?

A: My parents, classmates and my lecturers all played a very big part in motivating me.

I would like to specially mention two particular lecturers - Dr Kavitha and Dr Charles Lee, who had the most positive impact on me, second only to my parents. They inspired me to push myself to ensure that I gave my best.

Dr Kavitha amazed me with the amount of passion she had for teaching. She even managed to inject humour into a science-heavy module which otherwise would have been a dry module to some. She definitely made me want to do better for the module.

Dr Charles always asked interesting questions during class. I was motivated to answer them so I always did extra research before classes. It was just my luck that the research I did helped me in some way during the exams.

Q: How would you describe your experience in pursuing the programme at PSB Academy?

A: It is a very positive learning environment and a good experience, overall. The facilities were great and I really appreciate the online tutor, where I could recap on the earlier lectures. The course was well organised and everything felt smooth.

Q: What other activities do you engage in, for leisure?

A: Improvisational classes at the Improv Company. It keeps my creative juices flowing and definitely gives me a break from the hectic weekdays.

Q: What do you think are good traits to have as a student and why?

A: I think students need to be disciplined, as you can easily and very quickly start to procrastinate. To overcome this challenge, I decided to keep a log on how much time was being wasted with very little being achieved. It sure was an eye-opener to me.

If a student can be disciplined, can set clear objectives and goals and allow minimal distractions and procrastination, I am sure he or she will do well.

Q: Where do you see yourself in the next five years?

A: I see myself playing a key role with an organisation, in areas of Environment, Occupational Health & Safety, to help Singapore achieve its Vision Zero, which was developed to instill the mind-set that all workplace injuries and health issues are preventable.