

8:30am – 3:30pm, Tuesday 21 November

The Campus Connection

Hosted by UNSW Engineering

On campus only: The Roundhouse

Register to the event

Time	Topic/Session	Presentation title							
8:30 – 9:00	Tea, coffee, registration								
9:00 – 9:15	Opening & Acknowledgement of Country	Opening & Acknowledgement of Country, Launch of the Engineering Education White Paper Presenter: Professor Maurice Pagnucco, Deputy Dean (Education)							
9:15 – 10:00	Morning keynote	Engineering Educators Supporting Community-Engaged Learners and Critical Thinkers Presenter: Prof. Araceli Martinez Ortiz				Abstract			
Function Room 2, Level 1 (10:15 - 11:50)		Function Room 3, Level 1 (10:55 – 12:10)		Function Room 5, Level 1 (10:15 - 12:15)	Function Room 6, Level 1 (10:15-12:15)	Main Ground Floor (10:00- 1:00)			
10:15 – 10:30	College Chaos Presenter: Irene Ling			Workshop 1 Betwixt and In-Between but Better: Connecting Students with Others and Each Other Presenters: Dr. May Lim, Ms Melinda Wimborne, Ms Priscilla Tan, Mr Hamish McFarlane	Workshop 2 PlayEnergy – A massive multiplayer online game to teach sustainability Presenters: Dr. Murad Tayebjee, Prof. Alberto Motta, Prof. Isabella Dobrescu	Student Project Exhibition All ChallENG teams			
10:35 – 10:50	Assistive Tech Hub and the Community Presenters: Chadi Abi Fadel (Artist, Scientist) & A/Prof. Lauren Kark								
10:55 – 11:10	Bring the Market to Campus Presenter: Dr Thulaisiharan Sivapalan	10:55 – 11:10	Turning Industry Projects into Classroom Wisdom Presenter: A/Prof. Meead Saberi Kalae						
11:15 – 11:30	Humanitarian Engineering at UNSW – Principles and Challenges Presenter: Dr James Hayes	11:15 – 11:30	Reimagining Learning: Lights, Camera, Engagement! Sparking Student Interest in Accounting and Finance with Industry Case Study Videos Presenter: Dr Kristina Vojvoda						
11:35 – 11:50	Industry Challenge for the elites Presenter: Dr Natalie Oh	11:35 – 11:50	Alternative formative assessment using Desktop Site Tours (DST), a 360 virtual platform Presenter: Dr Sarah Grundy						
		11:55 – 12:10	Two eyed seeing: campus as Country Presenter: Ms Eva Lloyd						
12:00 – 1:00	Lunch break								
1:15 – 1:55	Panel Discussion	Unlocking Campus: Creating an Inclusive and Dynamic Student Experience Host: Julian Cox Presenter: Steven Davis, Lawrence Crumpton, Laura Hibbert, Eamonn Lee							
2:00 – 3:30	Vertically Integrated Projects	VIP Pitch Competition							

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Engineering Educators Supporting Community-Engaged Learners and Critical Thinkers

Presenter: Araceli Martinez Ortiz, Ph.D

In the context of celebrating the campus connection, this presentation explores the pivotal role of engineering educators in fostering community-engaged learners and nurturing students' critical thinking skills. Emphasizing the symbiotic relationship between academic study and practical application, highlights of relevant literature will be reviewed and promising strategies and approaches that engineering educators can employ to bridge the gap between theoretical knowledge and embracing the power to address social justice challenges will be presented.



Araceli Martinez Ortiz, Ph.D. is the Microsoft President's Endowed Professor of Engineering Education at the University of Texas at San Antonio (UTSA). She directs the graduate engineering education programs in the College of Engineering and Integrated Design and holds a dual appointment with the College of Education and Human Development. As an engineer and a scholar in engineering education, Dr. Martinez Ortiz leads large-scale national intervention and research efforts that explore how integrated, engineering education can most effectively be designed and delivered and how women and other historically underrepresented students can navigate educational and societal challenges to develop motivation and strengthen their identity to study and succeed in engineering. Araceli is also the Executive Director of the Dr. Manuel P. Berriozábal Prefreshman Engineering Program at UTSA, a highly respected K-12 STEM academic program serving thousands of students in the San Antonio Community since 1979.

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College Chaos

Presenter: Irene Ling

Human have horrible memory. For most, it likely we will remember less than 0.001% of our lives. However, physical spaces always seem to help hold onto our experiences, reminding us of the zeitgeist of periods of our lives. We inherently form connections to the physical places we experience in, be that our childhood homes, the local supermarket, or even campus. While almost everyone attending university has some sort of connection to campus, I've found that living on campus creates an extremely unique social microenvironment.

Using a pastiche of footage from a week living the college life and short interviews of my friends, I want to present a holistic view of the on-campus living experience, demonstrating our unique connection to the campus. To me, campus mediates every aspect of my life. From my academics to my social circle and everything in-between, campus to a college student is more than just a bunch of lecture halls. Its our home.



Irene Ling: Hi! I'm Irene. Having just finished high school last year, I commenced my first year of studying a Bachelor of Mechanical Engineering / Science (Pharmacology) here at UNSW. I moved from a small coastal town 4 hours up the coast to Sydney and am now living on campus. Outside of my academics, I enjoy doing crafty things like drawing and scrapbooking, and I also believe that soup is one of the most superior foods.

Bring the Market to Campus

Presenter: Dr.Thulaisiharan Sivapalan, Sarah Watts

Going to Market – Is a tutorial activity in a first year integrated first year commerce subject that aims to maximise learning inside and beyond the boundaries of campus. Finance is a famously inaccessible subject from many students’ points of view; it has maths, often plenty of business jargon, and serious real-world implications when it comes to effective business management. For many of our Integrated First Year students, it’s a subject with no tangible relation to what they know and have experienced, which can make it a daunting prospect. Of course, this creates challenges for our teachers too – how do we bring finance to life in a way that makes sense to students, engages them, and gets them to apply their learnings in a concrete, authentic way?

In Going to Market, the physical classroom becomes the financial marketplace where students put their money where their mouth is. The room is split into the distinct markets – the Debt Market and Capital Market – so that students can physically move about the space to explore and discuss their different financing options for their group’s assigned organisation. Further transporting them to the market space, the tutor plays background “market noise” to engage the senses and provide a baseline buzz in the room, encouraging students to immerse themselves in the hubbub.

By linking the classroom space to an external environment which just about everyone has experienced, we bring the capital markets to life and make students the agents of their learning. The task also blends the online environment into the mix by culminating in the creation of an online artefact using Microsoft Whiteboard, where students collect visual evidence of their financing decisions from the Going to Market activity. They then close the learning loop of their physical market experience by annotating/reflecting on the activity as part of a broader Reflective Learning Portfolio assessment.



Dr. Thulaisiharan Sivapalan is a published researcher focused on investigating the relationship between tax, retirement income and healthcare expenditure. More than 15 years’ experience in analysing, interpreting, connecting and communicating quantitative and qualitative data. Experienced in preparing policy recommendations, implementing corporate governance mechanisms, identifying and mitigating organisational risk, stakeholder management and relationship development and leadership.



Sarah Watts is an Education Course Designer from the Education Design and Delivery team in the Business School. She worked with the COMM1170 team on the course revision project, including assessment changes scaffolded by student-centred tutorial activities like the one in today’s presentation. She would love to hear from others both ideas to enhance this activity, as well as what other courses are doing to engage their students in active learning in tutorial environments.

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Humanitarian Engineering at UNSW - Principles and Challenges

Presenter: Dr. James Hayes

Humanitarian Engineering is now a minor at UNSW, but how does the values of humanitarian action align with engineering perspectives? Engineering students studying the ways in which humanitarian aid operates have to understand not just the significant disparity between resources such as materials, information, and time between humanitarian and conventional engineering projects. Because additionally, considerations of the enormous impact of culture, of data scarcity, as well as the ethical and organisational systems in place for humanitarian actors require careful education and expertise.

To that end, the course ENGG4103: International Humanitarian Response has adopted multiple assessment tools relating to self reflection, co-operation, and critical thinking to educate its students in the ways in which the humanitarian space must engage with its objectives. This culminates in students participating in the RedR program “Essentials of Humanitarian Practice” where students engage with content provided by experienced humanitarian aid workers for the best possible exposure to the humanitarian world.



Dr. James Hayes

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Industry Challenge for the elites

Presenter: Dr. Natalie Oh

What distinguishes this course from other industry engagement courses is the extensive engagement with industry partners, with over 10 collaborating within a single course. Going beyond traditional mentorship, the industry engagement offers one-on-one mentorship, a unique aspect of this program; they actively participate in the student selection process, conducting interviews, providing feedback, and assessing student performance. This involvement cultivates a profound sense of collaboration and mutual ownership of the course.

This unique course provides an opportunity for high-achieving students to cultivate and elevate their leadership skills through active engagement in real-world industry research projects, enhanced by personalized mentorship from partnering companies. In this program, students take on leadership roles in formulating innovative solutions for 'live' tangible business challenges initiated by partnering companies. These projects receive one-on-one (or maximum 3 students per mentor) guidance and on-site mentorship from company representatives, fostering a highly collaborative and hands-on learning experience.

Under the combined mentorship of partnering companies and UNSW academics, students are not only encouraged to apply their university learnings but to think expansively and creatively, broadening their problem-solving capabilities. Further, networking opportunities facilitate lasting connections with industry experts, enhancing leadership and professional competencies. In essence, this course orchestrates a comprehensive and transformative leadership journey, seamlessly integrating industry engagement, advanced problem-solving, employability skills, and professional development. It diligently prepares students to emerge as self-assured and highly effective leaders poised for success in the ever-evolving business landscape.

Importantly, the program's benefits extend well beyond students, as partnering companies gain access to outstanding solutions generated by students, which can be leveraged to enhance their own business operations.



Dr. Natalie Oh

As a Senior Lecturer in the School of Banking and Finance, I have been awarded a Senior Fellowship of the Higher Education Academy (SFHEA) for my contribution in higher education. My education approach empowers students to take ownership of their learning through practical experience and industry partnerships. I have also published in leading international finance journals and served as a consultant for the World Bank in Washington, D.C. Additionally, I serve as a director for a not-for-profit organization dedicated to alleviating poverty and supporting low-income developing countries.

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Two eyed seeing: campus as Country

Presenter: Eva Lloyd

How can a re-seeing of 'campus' enable connection, collective wisdom, and care for Country in students and staff?

This discussion will share learnings from a capstone Design Studio course, piloted within the UNSW Interior Architecture program in 2023, that examined the theme 'Creative communities: caring for Country'.

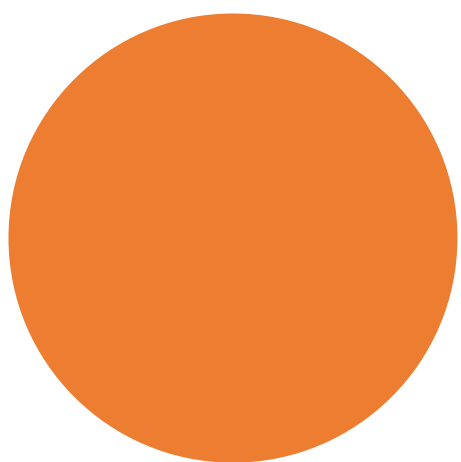
At a time of climate crisis, built environment practitioners and educators are re-thinking human-centred approaches. First Nations knowledges offer ways of understanding more than human approaches, with much student learning to be drawn from seeing campus as Country.

In this course, the 8 Ways framework (2021) was used to re-imagine Design Studio pedagogies and the campus learning experience, through sensing, walking, making, remembering and giving back to Country.

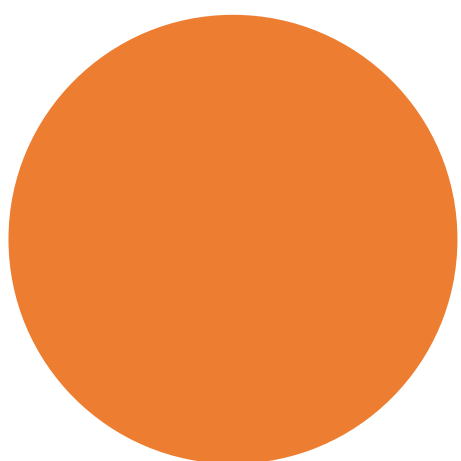
Preliminary findings from evaluations of student surveys and staff focus group feedback will be presented, with a focus on tools to foster relationships of reciprocity with Country through campus connections.

This 90-student, 5-tutor course was co-developed and co-led by Built Environment Professor of Practice Indigenous, Dr. Gillian Barlow, Associate Professor of Practice Indigenous Bernadette (B) Hardy, and Senior Lecturers, Eva Lloyd and Dr. Sing D'Arcy.

<https://www.8ways.online/>



Eva Lloyd



Associate Professor Indigenous Bernadette Hardy

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Reimagining Learning: Lights, Camera, Engagement! Sparking Student Interest in Accounting and Finance with Industry Case Study Videos

Presenter: Dr. Kristina Vojvoda, Dr. Conor Clune, Dr. Victoria Clout

Our education initiative is an innovative project which seeks to fully integrate classroom industry speakers at scale. This project involves the production of 10 industry-speaker case study videos in accounting and finance discipline areas. The key innovation element relates to the tailored for seamless integration of these industry videos into the curriculum of an integrated first-year course in the Bachelor of Commerce, COMM1140 Financial Management. The industry videos will serve as engaging case study prompts and will be complemented with discussion questions during tutorials. The aim of this initiative is to foster active student participation sparked by the videos and create engaging industry-speaker embedding at scale. This project was funded by a UNSW Business School Education Initiative Seed Funding Grant.

An integral aspect of the project is our collaboration with the UNSW Accounting Society (AccSoc) to ensure that the student voice was incorporated. Their valuable perspective contributed to the overall quality and relevance of the videos produced. Continuing student feedback will be sought each term.

At the 2023 UNSW Education Festival, our presentation would share the video development process. This would provide insights to educators about our journey and highlight the anticipated benefits for students as we implement these industry case study videos.



Dr. Kristina Vojvoda is a Lecturer in Accounting (Education Focused) at UNSW, holds a PhD in Accounting from UTS. She is an award-winning educator dedicated to inspiring and engaging students. Utilising innovative educational technologies to connect with students, she employs an active learning approach to personalise their learning experiences. Kristina played a key role in developing the Integrated First Year course, COMM1140 Financial Management, in UNSW's Bachelor of Commerce and is part of the teaching team.



Dr. Conor Clune is a Senior Lecturer in the School of Accounting, Auditing and Tax. Since joining UNSW, Conor's teaching has primarily been located in the first-year experience of the Bachelor of Commerce. He was the primary developer of COMM1140 Financial Management – one of the core units in the Integrated First Year – and he continues to be part of the COMM1140 teaching team today.



Dr. Victoria Clout is a Senior Lecturer and Deputy Head of School (Education) at UNSW. She has a track record of high-quality research publications in corporate governance and financial accounting. She is a Deputy Editor of Accounting & Finance. Her contributions to leadership have culminated in several awards including a 2023 Dean's Emerging Leadership Award. Victoria has experience in active-learning, team-based learning, and online teaching. She is an Honorary Fellow of the Hanken Centre.

Alternative formative assessment using Desktop Site Tours (DST), a 360 virtual platform

Presenter: Dr. Sarah Grundy, Ms. Elise Elkington, Associate Professor Pierre Le-Clech, Dr. Emma Lovell, Dr. Peter Neal

Australian manufacturing is diverse from food and beverages to various utilities (renewable and non-renewable energy, water). All these are essential services even during the strict Covid-19 crisis and continue to hire many Engineering discipline (through internship and graduate programs). It is well known that Onsite visits to manufacturing plants are an exciting and enriching authentic learning opportunity that allows students to contextualise their classroom learning. However, providing students with these experiences has become increasingly difficult, as safety and financial requirements limit the size and frequency of site tours. The School of Chemical Engineering, Faculty of Engineering has invested in sustainable digital resources to provide students with site visits via the virtual platform. A key part of the project was to create teaching and learning (T&L) activities for several courses and programs. In this presentation, we would like to showcase some examples of the Desktop Site Tours (DST) and T&L activities that accompany these sustainable digital assets.



Dr. Sarah Grundy is an education-focused Senior Lecturer specialising in process engineering at the School of Chemical Engineering. Her passion includes engineering education and current trends in industry. Currently, Sarah teaches predominantly design courses and is dedicated to providing authentic learning experiences for her students.



Ms. Elise Elkington is a final year multiple award-winning undergraduate Chemical Engineering student who excels in processing engineering and has worked on innovative teaching and learning projects. These include project-based learning projects, digital assets development and more.



Associate Professor Pierre Le-Clech is the Deputy Head (Engagement) in the School of Chemical Engineering. His expertise is in membranes technology and water treatment research. An experience course convenor and lecturer of the capstone design course which utilises authentic learning resources. Pierre is an expert in the water industry and the creation of teaching and learning resources for this manufacturing area.



Dr. Emma Lovell is a Senior Lecturer and DECRA Fellow in the School of Chemical Engineering and recognised for her expertise in process plant design and renewable energy research. An experience course convenor and lecturer of multiple design courses. Emma is an expert researcher in advanced materials and energy industry as well as the creation of teaching and learning resources for this manufacturing area.



Dr. Peter Neal is an Education Focused lecturer and Academic Governance Coordinator with UNSW Chemical Engineering. He has been teaching undergraduate and postgraduate engineering students for more than 10 years, and has a key focus on developing his students' capacity in design, enquiry, and professional skills. As the first Education Focused academic in the School of Chemical Engineering and as a PVCESE Education Focused Champion, he works to develop the educational capacity of his colleagues in his school, the Faculty of Engineering and across UNSW.

Turning Industry Projects into Classroom Wisdom

Presenter: Associate Professor Meead Saberi Kalae

This presentation explores the innovative integration of a real-world industry project into university classrooms, using a traffic micro-simulation study as an example. Leveraging a past state government-funded project, a complex traffic study is transformed into an engaging class assignment. Through a computer simulation of a real roundabout in Victoria and the evaluation of various traffic control strategies, students gained practical insights into real-world traffic management challenges and solutions. This approach enhances students' learning experiences and demonstrates the potential for academia-industry engagement to enrich education.



Dr. Meead Saberi Kalae is an Associate Professor in Transport Engineering based in the School of Civil and Environmental Engineering at UNSW, with a PhD from Northwestern University. He leads the CityX research lab, part of the Research Centre for Integrated Transport Innovation (rCITI), focusing on urban transport modeling and optimisation. He is a co-founder at footpath.ai, a UNSW spinout, that uses GeoAI for automated mapping of walking infrastructure.

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Betwixt and In-Between but Better: Connecting Students with Others and Each Other

Presenter: Dr. May Lim, Ms Melinda Wimborne, Ms Priscilla Tan, Mr Hamish McFarlane

In this workshop, I will show how events, facilities and personnels that are available and accessible to UNSW instructors and students can be integrated to form learning experiences that connect students with each other and the world. These include active learning rooms, Microsoft O365 platforms, Padlet, generative AI, UNSW Library, ELSI, Careers, Makerspace and UNSW Founders, as well as industry events at ICC Sydney. We will explore how these learning activities bridge some of the gaps in student learning and campus experience, and thereby shift students from a liminal mental and physical state to one where there is belonging and purpose.



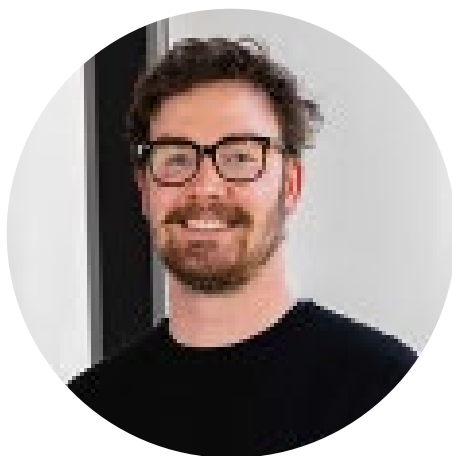
Dr. May Lim is a Senior Lecturer at the School of Chemical Engineering. Her teaching interest are in methods that enable engineering students to gain mastery and transcend their discipline through project-based learning and industry relevant learning.



Ms Melinda Wimborne is an experienced maker and designer across many disciplines ranging from artisan to digital. Melinda originally joined UNSW to establish the Michael Crouch Innovation Centre's Makerspace and has been building and developing a network of connected workshops and maker spaces across UNSW ever since. Her wide-ranging fabrication experience, and passion for making, has seen UNSW Engineering become a national leader in student-facing workshops and project-based learning.



Ms Priscilla Tan is an Industrial Designer and Design Educator with a background in Accounting and Finance. She has diverse experience in bringing ideas to market and is a passionate problem-solver. Priscilla is the Prototyping Manager at UNSW Founders. She helps students with business model canvas, product MVP, and prototyping to manufacturing.



Mr Hamish McFarlane is the Makerspace coordinator for the MCIC (Michael Crouch Innovation Centre) Makerspace. His help will get you from idea to prototype in the hardware prototyping world, utilising both digital and traditional Manufacturing techniques. In this role, he guides students with product design, industrial design, model making for prototyping, digital manufacturing and computer aided design (CAD)

PlayEnergy - A massive multiplayer online game to teach sustainability

Presenter: Dr. Murad Tayebjee, Prof. Alberto Motta, Prof. Isabella Dobrescu

Enter the Playconomics platform and its Engineering add-on, PlayEnergy. Playconomics is a massive multiplayer (millions of students can be hosted in the same virtual world) persistent (it continues even when students are not actively engaging) online (can be run on browsers) game (indistinguishable from a regular videogame). It is the first example of a functioning metaverse in education and was developed by Lionsheart Studios – a company that spun off the UNSW’s gamification group and based in the UNSW Business School. In collaboration with LionsHeart, Murad Tayebjee and the School of Photovoltaic and Renewable Energy Engineering have developed PlayEnergy – a comprehensive Playconomics module that gives students a taste of the tri-dimensional complexity mentioned above.

In this module, students build thriving societies that consume, produce and trade goods and services – all accurately underpinned by the sound principles of micro- and macroeconomics. Thermodynamic models and real weather data are then used to simulate the energy efficiency of a home, as well as the generation of solar and wind power, all while balancing an electrical grid. Quite the complex problem... And of course, students also have the option of using fossil fuels... but that may bring natural disasters that would impact their societies!

PlayEnergy can thus provide meaningful insights for both the social scientist and STEM student. In this workshop, we will show you how ‘the magic’ comes together: first, academics will be introduced to the game, and then they will be shown examples of how it may be incorporated into their courses. For instance, you may want an extra workshop/tutorial, or an additional assessment or team-building exercise – the game can seamlessly provide this, while also keeping student satisfaction high.



Dr. Murad Tayebjee is a Senior Lecturer at the School of Photovoltaic and Renewable Energy Engineering. His interests are in renewable energy and physical chemistry. He has focussed his work on the laser spectroscopy of molecular materials for applications including solar cells, low energy lighting and information technology. He is passionate about renewable energy education and adapting his teaching to maximise student engagement. Murad is also an ARC Future Fellow, a NSW Young Tall Poppy awardee, and an associate investigator of STEP UP.



Alberto Motta is a Professor of Economics at UNSW. His interests are in contract theory, development economics and labour. He studies the types and features of organizational design that are most effective in firms, enforcement agencies and media. More recently, he combines theory, empirical analysis and randomised controlled trials to help design interventions that aim to improve educational outcomes using technology. Alberto is also a Fellow of UNSW's Scientia Education Academy, and the co-chair of the STEP UP initiative in Education, and the co-founder of Lionsheart Studios.



Isabella Dobrescu is a Professor of Economics at UNSW. Her interests are in labour, public finance, health and applied econometrics. She has primarily focused her structural work on topics related to consumption and saving dynamics, as well as studying risk-taking and cognition via nonparametric partial identification methods. More recently, she combines theory, empirical analysis and randomised controlled trials to help design interventions that aim to improve educational outcomes using technology. Isabella is also the Deputy Head of the School of Economics, co-chair of the STEP UP initiative in Education, and co-founder of Lionsheart Studios.