

**WESTERN SYDNEY
UNIVERSITY**



International Network for Engineering Education & Research
INEER

ICEER2016

**INTERNATIONAL CONFERENCE
ON ENGINEERING EDUCATION AND RESEARCH**

21-24 NOVEMBER 2016
WESTERN SYDNEY UNIVERSITY
Parramatta campus, Sydney, Australia

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ProZ3D Solutions

TAYLOR

22nd November 2016

This building for:

- Registration
- Conference Opening
- Keynote Address
- Parallel Paper Sessions
- Morning Tea, Lunch, Afternoon Tea
- Sponsor Exhibition

23rd - 24th November 2016

This building for:

- Registration
- Keynote Address
- Parallel Paper Sessions
- Morning Tea, Lunch, Afternoon Tea

Shuttle Bus Pick-up and Drop-off Point. Check the schedule inside this program for departure and arrival times.

22nd November 2016
Widevision Exhibition, Sponsored Cocktail Reception
6:00pm, Building EE

21st November 2016
Registration & Welcome Reception
6:00pm, Building EZ

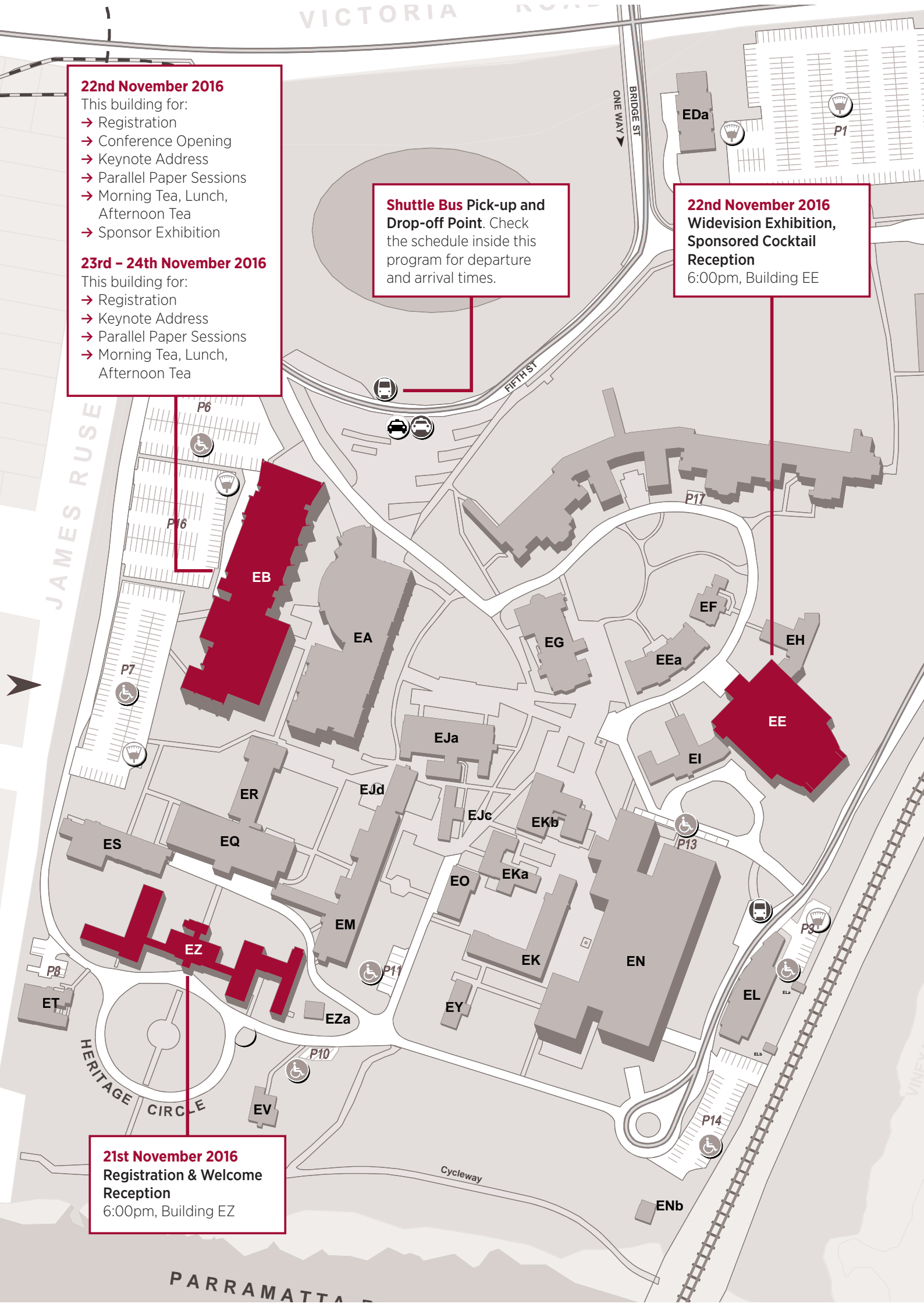


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iCEER 2016 Technical Program At-a-Glance

The registration desk will be open during conference hours

Monday – November 21, 2016

18:00 - 20:00	Registration
18:00 - 20:00	Welcome Reception

Tuesday – November 22, 2016

08:00 - 09:00	Registration
09:00 - 09:45	Conference Opening
09:45 - 10:45	Keynote 1
10:45 - 11:15	Tea & Coffee Break
11:15 - 12:45	Session 1A/1B/1C
12:45 - 14:00	Lunch
14:00 - 15:00	Keynote 2
15:10 - 16:30	Session 2A/2B
16:30 - 17:00	Tea & Coffee Break
17:00 - 18:00	Session 3A/3B
18:00 - 21:00	Evening Reception

Wednesday – November 23, 2016

08:00 - 09:00	Registration
09:00 - 10:00	Keynote 3
10:00 - 10:30	Tea & Coffee Break
10:30 - 12:00	Session 4A/4B
11:50 - 13:00	Lunch
13:00 - 14:00	Keynote 4
14:10 - 15:30	Session 5A/5B
15:30 - 16:00	Tea & Coffee Break
16:00 - 17:20	Session 6A/6B
18:15 - 22:00	Conference Dinner

Thursday – November 24, 2016

08:00 - 09:00	Registration
09:00 - 10:00	Keynote 5
10:00 - 10:30	Tea & Coffee Break
10:30 - 11:50	Session 7A/7B
11:50 - 13:00	Lunch
13:00 - 14:00	Keynote 6
14:10 - 15:30	Session 8A/8B
15:30 - 15:45	Conference Closing
15:45 - 16:00	Tea & Coffee Break



Welcome from the Conference Chair

On behalf of the Organising Committee, it is our pleasure to welcome you to Sydney and to the International Conference on Engineering Education & Research (ICEER2016).

The ICEER2016 is hosted by the School of Computing, Engineering and Mathematics (SCEM) of Western Sydney University, and is being supported by International Network for Engineering Education and Research (iNEER), USA. The main themes of ICEER2016 include Technology in Engineering Education, Engineering Education Delivery and Development, Engineering Curriculum Development, Collaboration with Industry, Occupational Health & Safety Education and Engineering Education, Technology & Society. The goal of the conference is to provide a platform to academics, scholars, researchers and practitioners across all continents and countries to present and disseminate the latest innovative ideas, research results, and findings on various aspects of engineering education.

Please join us at our SCEM sponsored Widevision Technology Innovation Exhibition on Tuesday, 22 November to network with our University staff and see the latest student projects.

On behalf of the organising committee, we wish to thank all authors for their papers and contributions to this conference. We wish to thank Western Sydney University management for providing the facilities and infrastructure at Parramatta that made the organisation of this conference possible and Professor Simeon Simoff, Dean, School of Computing, Engineering and Mathematics for his excellent support for ICEER2016. We would like to thank the keynote speakers, some of them have travelled from overseas and interstates to share their wealth of experiences and knowledge in engineering education.

We would like to share with you our gratitude towards all members of the organising committee for their combined efforts and dedication to the success of ICEER2016. We offer thanks to the General Co-Chair Dr Vojislav Ilic for his excellent contribution, members of the international technical committee and other reviewers, who offered their time and technical expertise during the review process. We also thank iNEER for their cooperation and support (especially Professor Dr Win Aung) and SCEM Event & Marketing staff, in particular, Mrs Nicolle Fowler, for providing the secretarial and logistic supports, which are the heart of ICEER2016. Special thanks to all session chairs, SCEM HDR student volunteers and sponsors for their contribution to make ICEER2016 a success.

Finally we would like to thank all speakers, participants and attendees, and we look forward to several days of stimulating presentations, debates, friendly interactions and thoughtful discussions that will forward engineering education.

Good day and kind regards,

Associate Professor Ataur Rahman, PhD, FIE Aust.
Western Sydney University



INEER welcomes the ICEER 2016 conference participants to Sydney

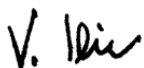
As a member of the iNEER Board and on its behalf, it is my pleasure to welcome you to the 2016 iNEER event hosted by the Western Sydney University School of Computing, Engineering and Mathematics. This is the second iNEER conference in Australia; the first was in distant 2007 at the Victoria University in Melbourne.

In its striving for excellence in all its fields of endeavour, the Western Sydney University, graciously offered its hospitality in 2016 to the iNEER International Community through the School of Computing, Engineering and Mathematics, headed by the Dean, Professor Simeon Simoff. iNEER formally thanks everyone who made this event possible.

iNEER had its beginnings in the early days of globalization by providing an effective professional platform for collaboration, exchange of ideas and collegiality between international communities engaged in education of future engineers. This was especially welcome in times of lingering international isolation, as was the case immediately after the Cold War Era. This platform had no membership fees and relied entirely on participants' strong motivation to share their professional experiences and provide excellent opportunities for international liaisons world-wide. It proved a huge success, largely thanks to its hard working Secretary General, Dr Win Aung and like-minded close collaborators who all shared the same vision and passion! It held meetings/retreats amongst scholars in various countries. I was privileged to join it when it formally became the International Network for Engineering Education and Research (iNEER) in 2001, having discovered its earlier morph in the year of Sydney Olympics, and have participated in most of its events ever since!

In its quest to promote exchange of ideas amongst engineering educators, iNEER also published a highly successful annual compendium of innovative ideas entitled World Innovations in Engineering Education and Research with contributing authors from different parts of the globe. In addition, it awarded formal recognition for exceptional educational endeavors of individual members at its annual events. In this way, iNEER set high standards for the conferences of this type that have since emerged.

On behalf of the iNEER Chair, Professor Frode Eika Sandnes, Pro Rector, Oslo and Akershus University College of Applied Sciences Oslo, Norway, I welcome you all to the ICEER 2016!



Vojislav Ilic, PhD
Member
iNEER Board

iCEER2016 Committee

Organising Committee

- Associate Professor Ataur Rahman, General Co-Chair, Western Sydney University
- Dr Vojislav Ilic, General Co-Chair, Western Sydney University
- Mr Michael Walsh, Finance Chair, Western Sydney University
- Associate Professor Richard (Chunhui) Yang, Publication Chair, Western Sydney University
- Dr Helen Wu, Western Sydney University
- Dr Ali Hellany, Western Sydney University
- Associate Professor Gu Fang, Western Sydney University
- Associate Professor Surendra Shrestha, Western Sydney University
- Dr Md Mahmudul Haque, Western Sydney University
- Dr Tosin Famakinwa, Western Sydney University

Advisory Committee

- Professor Simeon Simoff, Western Sydney University
- Professor Yang Xiang, Western Sydney University
- Professor Chin Leo, Western Sydney University
- Professor Abdallah Shanableh, Sharjah University
- Professor Firoz Alam, RMIT University

Technical Committee

- Associate Professor Ataur Rahman, Western Sydney University
- Dr Vojislav Ilic, Western Sydney University
- Associate Professor Richard (Chunhui) Yang, Western Sydney University
- Associate Professor Thinh Nguyen, Victoria University
- Associate Professor Surendra Shrestha, Western Sydney University
- Dr Ragbir Bhathal, Western Sydney University
- Dr Kimberley Vincent, Western Sydney University
- Associate Professor Fidelis Mashiri, Western Sydney University
- Associate Professor Swapan Saha, Western Sydney University
- Associate Professor Kashem Muttaqi, University of Wollongong
- Associate Professor Faisal Anwar, Curtin University
- Dr Ranjith Liyanapathirana, Western Sydney University
- Associate Professor Mohammad Rasul, Central Queensland University
- Associate Professor Mahmood Nagrial, Western Sydney University
- Dr Sarah (Yixia) Zhang, University of NSW, Canberra
- Associate Professor Wenyi Yan, Monash University
- Associate Professor Arun Patil, Deakin University
- Dr Mary Hardie, Western Sydney University
- Dr Milan Simic, RMIT University
- Dr Rod Fiford, University of Sydney

iCEER 2016 Conference Programme

Day 1 - Monday 21 November 2016

Time	Session
18:00 – 20:00	Registration Female Orphan School, Building EZ Foyer Parramatta (South) Campus Room: Building EZ Foyer
18:00 – 20:00	Welcome Reception Female Orphan School, Building EZ Foyer Parramatta (South) Campus Room: Building EZ, Room G.23

Day 2 - Tuesday 22 November 2016 - Keynote Speakers

Keynote 1:

9:45am – 10:45am

Building: EB. 2.02

Professor Vijay P. Singh

Department of Biological and Agricultural Engineering, and Zachry Department of Civil Engineering in Texas A & M University, USA.



Title – Re-engineering Engineering Education

Biography

Prof Vijay Singh is the Distinguished Professor and Caroline and William N. Lehrer Distinguished Chair in Water Engineering, Department of Biological and Agricultural Engineering, and Zachry Department of Civil Engineering in Texas A & M University, USA.

Prof Singh is one of the most distinguished engineering academics who has authored 853 journal papers, 314 conference papers and 24 text books. His Google scholar citation exceeds 33,000. He will present a keynote address on “Re-engineering Engineering Education” at iCEER2016.

Keynote 2:

2pm – 3pm

Building: EB. 2.02

Dr Ashley Brinson

Executive Director
The Warren Centre



Title – Technology Development for the Hyper-Globalised Market

Biography

Jonathan Ashley Brinson is the Warren Centre's Executive Director having joined the organisation in July 2014. Ashley has a broad range of experience across the technology and innovation spectrum and over 25 years' experience in chemical engineering. Ashley is an inventor, named on five US patents in chemical engineering design. With extensive experience in the silicon industry, Ashley has designed, built and managed large scale industrial plants in the US, UK and China. Ashley led cutting-edge robotic solar energy application development and marketing programs in China, Korea, California and Europe prior to coming to Australia to further his knowledge of intellectual property at the University of Sydney.

Ashley is well versed in clean energy, manufacturing, construction, chemical engineering, project management, stakeholder engagement and transformational leadership. Ashley is a passionate advocate for Australian innovation and the economic opportunities related to growing demand from Asia.

Ashley holds a Bachelor of Chemical Engineering from the Georgia Institute of Technology, an MBA from Rutgers University New Jersey and a Juris Doctor from the University of Sydney Law School.

Day 2 - Tuesday 22 November 2016 – Programme Schedule

Time	Session	
8:00 - 9:00	Registration Room: Building EB, Ground Floor Foyer Parramatta (South) Campus	
9:00 - 9:45	Conference Opening Room: Building EB, Room 2.02 (EB.2.02) Parramatta (South) Campus	
9:45 - 10:45	Keynote 1 – Professor V P Singh Title: Re-engineering engineering education Chair: Associate Professor Ataur Rahman Room: Building EB, Room 2.02 (EB.2.02)	
10:45 - 11:15	Morning Tea Room: Building EB, Room G.02	
11:15 – 12:45	Session 1A Chair: Associate Professor Surendra Shrestha Room: EB.G.21	
	11:15	Title: Evolution of Master of Engineering Coursework Degrees in Western Sydney University: Past, Present and Future (Invited Paper) Authors: R Liyanapathirana , C Leo and G Fang
	11:35	Title: Case Study: Comparison of Project-based, Creative Engineering Courses at Georgia Tech and Huazhong University of Science and Technology Authors: Y Hu , D Han, L Ling, T Kurfess, W Singhose and J Vaughan
	11:55	Title: Collaborative Project Based Learning in Novel 3D Printer Design Authors: M Simic and B Kennedy
	12:15	Title: Combining Experiential and Problem Based Learning: An Application in Fluid Power (Workshop) Author: P R Piergiovanni
11:15 – 12:45	Session 1B Chair: Dr Ali Hellany Room: EB.G.22	
	11:15	Title: Environmental Engineering for Civil Engineering students: Challenges and Solutions (Invited paper) Author: A Sathasivan
	11:35	Title: Use of Life Cycle Sustainability Assessment in Engineering Courses Author: B A Benedict
	11:55	Title: A Personalized Learning System to Address Background Deficiencies and Highlight the Value of Digital Logic Authors: B Lameres
	12:15	Title: Impact of Shale Gas Exploration Process on Environment in Poland Authors: S. Nagy , J. Siemek, R. Wiśniowski
	12:35	Discussion

11:15 – 12:45	Session 1C Chair: Dr Qi Cheng Room: EB.G.17	
	11:15	Title: Towards developing an awareness of the Cause of Health (Invited paper) Author: V Ilic
	11:35	Title: Development of small size material testing machine for regeneration medicine Authors: N Teramoto , Y Ohbuchi and H Sakamoto
	11:55	Title: Smart Power Grid of the 21st Century (Invited Paper) Author: A Kalam
	12:15	Title: Be Smarter Than Your Phone: An Interdisciplinary Educational Approach to Engineering and Innovation Author: J West
	12:35	Discussion
12:45 – 14:00	Lunch & Sponsor Exhibition Room: Building EB, Room G.02	
14:00 – 15:00	Keynote 2 – Dr Ashley Brinson Title: Technology Development for the Hyper-Globalised Market Chair: Dr Vojislav Ilic Room: Building EB, Room 2.02 (EB.2.02)	
15:10 – 16:30	Session 2A Chair: Associate Professor Ataur Rahman Room: EB.G.21	
	15:10	Title: Engineering Education and Training in Bangladesh: Opportunities and Challenges (Invited Paper) Author: M A Hannan
	15:30	Title: Past, Present and Future Trends in Electrical Power Engineering Education (Invited Paper) Author: M H Nagrial
	15:50	Title: Expanding the scope of Biomedical Engineering curriculum Author: V Ilic
	16:10	Title: Women's Aspirations towards Engineering Education in Sri Lanka Authors: H Y Ranjit Perera , Rahula A Attalage and Lalith De Silva
15:10 – 16:30	Session 2B Chair: Professor Chin Leo Room: EB.G.22	
	15:10	Title: Collaborative Learning Spaces – Challenges and Opportunities (Invited Paper) Author: S Shrestha
	15:30	Title: Practice of Active Learning in the Computer Science Course Authors: K Takemata and A Minamide
	15:50	Title: Curriculum Mapping Tool and Engineering Curricula Development Author: S Shrestha
	16:10	Development of Summer Outreach STEM Program: Case-Study Smart Lighting Authors: P Bofah, M Chouikha
16:30 – 17:00	Afternoon Tea Room: Building EB, Room G.02	

17:00 – 18:00	Session 3A Chair: Associate Professor Gu Fang Room: EB.G.21	
	17:00	Title: Persuasive Design through Industrial Design and Human Computer Interaction Research in favour of Child Development for Sustainable Behaviour and Water Conservation (Invited Paper) Authors: M Novoa , O Mubin 2, A Apalak
	17:20	Title: Enhancing Learning Experience by Collaborative Industrial Projects Authors: M Simic , M Spichkova, H Schmidt and I Peake
	17:40	Title: Improving student performance through engagement Authors: M Morgan and P O’Gorman
17:00 – 18:00	Session 3B Chair: Dr Vojislav Ilic Room: EB.G.22	
	17:00	Title: Development of a Microcontroller Course Using PIC16F1829 Author: Q Cheng
	17:20	Title: Engineering Education in Bangladesh; Implementation of Online Delivery Approach Authors: A Ahmed, M M Haque, M A Rahman, A Rahman
	17:40	Title: Preservation and Succession of Traditional Skills and Techniques of Woodwork using Digital Tools Authors: N Koga , Y Ohbuchi, T Shirakawa, H Sakamoto and T Yoshidome
18:00 – 21:00	<p style="text-align: center;">Widevision Technology Innovation Exhibition</p> <p style="text-align: center;">Sponsored Cocktail Reception School of Computing, Engineering & Mathematics</p> <p style="text-align: center;">Building EE, Auditorium</p>	

Day 3 - Wednesday 23 November 2016- Keynote Speakers

Keynote 3:

9am – 10am

Building: EB. 2.02

Professor Guy Littlefair

Pro Vice-Chancellor Industry & Strategic Partnerships
Deakin University



Title – Redefining engineering learning environments

Biography

Professor Guy Littlefair is Pro Vice-Chancellor Industry Development at Deakin University. He is a senior academic leader with over ten years' experience developing and implementing strategies, objectives and policies and navigating change to effectively manage the financial and human resources of university operating units in Australia and New Zealand. Guy has an exceptional 25+ year record in engineering industry, research and academia.

Previously the Dean of Engineering at Deakin University, Professor Littlefair is internationally regarded as an expert in the field of advanced manufacturing, having led teams of researchers in UK, New Zealand and now Australia focusing on the processing of materials. In these leadership capacities Professor Littlefair has worked with some of the world's most innovative research-led organisations, including Rolls Royce, DeBeers, Toyota, Jaguar Land Rover and QinetiQ.

Professor Littlefair was the Visionary and Architect of the \$5M CADET Initiative at Deakin officially opened in 2015 which is seen as a benchmark for industry engagement and engineering education in Australia.

Keynote 4:

1pm – 2pm

Building: EB. 2.02

Dr Michael Myers, OAM

Founder & Chairman
Re-Engineering Australia Foundation Ltd



Title – Motivating students to take up careers in Engineering

Biography

Michael began his career as a Mechanical Engineer, and has been involved in implementing computer aided engineering technology in organisations around the world. From leading the development and use of 3D printing for craniofacial constructive surgery through to the design of trains, planes & automobiles his clients have included Toyota, BOEING, British Aerospace, Lockheed Martin, Australian Submarine Corporation, Tata Technologies, Chinese Air Force and the Indian Navy.

With the goal of inspiring students to take up careers in Science, Technology, Engineering & Mathematics (STEM) Michael founded the Re-Engineering Australia Foundation in 1998. To date REA had mentored over 600,000 Australia students through its STEM based career intervention programs with 63% changing their career aspirations to be STEM based.

Michael has a Bachelor of Engineering, Masters & Doctorate in Business Administration, is the current President of Engineers Australia Sydney Division and is one of Australia's 100 most influential Engineers. In 2012 he was awarded the Order of Australia Medal for his services to youth through the Re-Engineering Australia Foundation.

Day 3 – Wednesday 23 November 2016 – Programme Schedule

Time	Session	
8:00 - 9:00	Registration Room: Building EB, Ground Floor Foyer	
9:00 - 10:00	Keynote 3 – Professor Guy Littlefair Title: Redefining engineering learning environments Chair: Associate Professor Surendra Shrestha Room: Building EB, Room 2.02 (EB.2.02)	
10:00 – 10:30	Morning Tea Room: Building EB, Room G.02	
10:30 – 11:50	Session 4A Chair: Dr M Muhit Rahman Room: EB.G.21	
	10:30	Title: Design, Development and Administration: Best Practices for Future Engineering Full Online Courses Authors: S Cruz-Pol and J R Ferrer
	10:50	Title: Transitioning to online delivery - A model for tertiary foundation Engineering teaching Authors: A B Wedding , A Cousins and D Quinn
	11:10	Title: Application of eLearning Course to Enhance Learning of Hydrocarbons Extraction from Unconventional Reservoirs Authors: S Nagy , J Siemek and R Wiśniowski
	11:30	Title: New Teaching Strategies for Engineering Students – New Challenges for the Teachers Authors: L Reng, L B Kofoed
10:30 – 11:50	Session 4B Chair: Dr Tosin Famakinwa Room: EB.G.22	
	10:30	Title: Studying Elements of Self-Paced Learning and Flipped Classroom to Enhance Course Design Author: B A Benedict
	10:50	Title: Updating Hydrology Course in Australian Universities: Incorporation of Social Hydrology using a Blended Learning Approach Author: A Rahman
	11:10	Title: Credentialing Students in Their First Separations Course-ChE360 Using a Problem Based Approach Author: N W Loney , S A Sorby
	11:30	Title: Engineering a Novel Anatomical Foot Model for Anatomy Education Author: T Famakinwa , M R Dayal, S Penkala
11:50 - 13:00	Lunch Room: EB, Room G.02	
13:00 - 14:00	Keynote 4 – Dr Michael Myers Title: Motivating students to take up careers in Engineering Chair: Associate Professor Ataur Rahman Room: Building EB, Room 2.02 (EB.2.02)	

14:10 – 15:30	Session 5A Chair: Associate Professor Surendra Shrestha Room: EB.G.21	
	14:10	Title: Use of Flipped Classroom Approach in Project Based Learning: Student Perspective Authors: L Jones and S Shrestha
	14:30	Title: Individual and Social Requirements Aspects of Sustainable eLearning Systems Authors: A D Alharthi and M Spichkova
	14:50	Title: Online Support System for Transnational Education Authors: M Spichkova, J Harland and A D Alharthi
	15:10	Title: Online Quizzes to Increase Student Learning in an Engineering Unit Authors: D Hagare and M M Rahman
14:10 – 15:30	Session 5B Chair: Dr Tosin Famakinwa Room: EB.G.22	
	14:10	Title: Traditional vs Non-traditional Teaching and Learning Strategies – the case of E-learning (Invited Paper) Author: G A Tularam
	14:30	Title: Use of virtual and remote laboratories in engineering education Authors: S Noor and A Rahman
	14:50	Title: On-line Assessment to Promote Engagement and Retention in Engineering Mathematics Authors: A P Hooper , K L Henderson and D R Gwynllyw
	15:10	Title: Blended Learning in Engineering Education: Students' and Lecturers' Perceptions and Achieving Learning Outcomes Authors: D S Liyanapathirana and O Mirza
15:30 – 16:00	Afternoon Tea Room: Building EB, Room G.02	
16:00 – 17:20	Session 6A Chair: Associate Professor Samanthika Liyanapathirana Room: EB.G.21	
	16:00	Title: Optimising PhD Supervision (Invited Paper) Author: A Sharma
	16:20	Title: Hydrology Education: Challenges and Future Directions Author: A Rahman
	16:40	Title: Restructuring higher education in Norway – consequences for engineering education Authors: A K Gjengedal and T Schive
	17:00	Title: Teaching and Learning of Statistical Hydrology: Challenges and Opportunities Authors: S Kordrostami, A Rahman , D Purdy

16:00 – 17:20	Session 6B Chair: Dr Vojislav Ilic Room: EB.G.22	
	16:00	Title: Truth Telling in Civil Engineering Education and Practice (Invited Paper) Author: I Cordery
	16:20	Title: Challenge of Teaching Science to Engineering Students Authors: S Rahman, R Bhathal and A Rahman
	16:40	Title: Enhanced Learning and Employability of Engineering Students Author: A Koncar
	17:00	Title: Entrepreneurship Capstone Design Project: Introducing Local Community-University Cooperation Model in South Korea Authors: E S Lee, J Kim, C Sung , B Jeon, C Won, H Joo
18:15 – 22:00	Conference Dinner Lachlan's at Old Government House Parramatta Park	

Keynote 5:

9am – 10am

Building: EB. 2.02



Professor Roger Hadgraft, FIE Australia

Director, Educational Innovation & Research

Faculty of Engineering & Information Technology

University of Technology Sydney, Australia

Title – Future Learning: It's all about the EXPERIENCE

Biography

Roger is a civil engineer with more than 25 years of research to improve engineering education. He has published many papers on problem- and project-based learning (PBL), and the use of online technology to support student-centred learning to meet the needs of engineering employers. He was instrumental in introducing a project-based curriculum in civil engineering at Monash University and in several disciplines at RMIT between 1998 and 2005. Roger has been a member of several national learning and teaching projects and he has consulted on PBL to universities both nationally and internationally.

Keynote 6:

1pm – 2pm

Building: EB. 2.02



Professor James Trevelyan

Professor, School of Mechanical & Chemical Engineering

University of Western Australia

Title – Creating Value from Engineering

Biography

James Trevelyan practices as a mechatronics and mechanical engineer developing new air conditioning technology, and is a fellow of Engineers Australia. He is well known internationally for pioneering research on sheep shearing robots (1975-1993), remote access laboratories and robots (1994 - 2002), landmine clearance methods (1996-2004) and engineering practice (2002-2015).

He was presented with the 1993 Engelberger Science and Technology Award in Tokyo, the world's pre-eminent award for robotics research, and has twice been presented with the Japan Industrial Robot Association award for best papers at robotics conferences.

His teaching has also been well recognised with a national and several UWA distinguished teaching awards, and also awards for papers at international conferences on engineering education. His most recent work is research on engineering practice that aims to understand how engineering work is actually performed; an aspect of engineering that has not been researched before. This research helps to explain why services in low-income countries such as safe drinking water usually cost much more than in industrialised countries, helping to explain continuing poverty in many countries. His new book, *The Making of an Expert Engineer*, provides solutions that could help eliminate most of the poverty we see today.

Day 4 – Thursday 24 November 2016 – Programme Schedule

Time	Session	
8:00 - 9:00	Registration Room: Building EB, Ground Floor Foyer	
09:00 - 10:00	Keynote 5 – Professor Roger Hadgraft Title: Future Learning: It's all about the EXPERIENCE Chair: Associate Professor Ataur Rahman Room: Building EB, Room 2.02 (EB.2.02)	
10:00 - 10:30	Morning Tea Room: Building EB, Room G.02	
10:30 – 11:50	Session 7A Chair: Associate Professor Sathaa Sathasivan Room: EB.G.21	
	10:30	Title: Experiential learning approaches for developing professional skills in postgraduate engineering students Author: D S Thorpe
	10:50	Title: Teaching and learning of structural analysis using state-of-the-art commercial computer software: a case study Author: F U A Shaikh
	11:10	Title: Virtual Presentation of Pressurized Water Reactor in Normal Operation and Accident Scenario Like the Fukushima as an Education Tool Authors: C H Leung , Y W Lai, M L Lam, Z Zhao, B L Luk, C-C Chieng and T-H Chen
	11:30	Title: Content Analysis of Australian Design Jobs to Improve Curriculum Authors: A Al Mahmud, B. Kuys and O Mubin
10:30 – 11:50	Session 7B Chair: Dr Helen Wu Room: EB.G.22	
	10:30	Title: The collaborative learning with PBL or Flipped Learning. Case of Engineering Drawing Course Author: V E R Valdivia
	10:50	Title: Adding Practice to Theory: Using Chevron Phillips's Tenets of Operation to Analyse Case Studies in Engineering Ethics Author: D Randall
	11:10	Title: The Assessment of Engineering Student Public Speaking Ability: What, How and Issues Authors: A E Ward , N R Jackson and B Baruah
	11:30	Title: Design and Systems Thinking in Development Engineering: A Case Study of Liver Fluke Infection in Khon Kaen, Thailand Authors: S Samiphak , A Agogino, S L Syme, R Lamoreaux
11:50 - 13:00	Lunch Room: EB, Room G.02	
13:00 - 14:00	Keynote 6 – Professor James Trevelyan Title: Creating Value from Engineering Chair: Dr Vojislav Ilic Room: Building EB, Room 2.02 (EB.2.02)	

14:10 – 15:30	Session 8A Chair: Associate Professor Surendra Shrestha Room: EB.G.21	
	14:10	Title: Empowering Teaching and Research to Provide Societal Value Author: J Bujnak
	14:30	Title: The Perception of Students towards Engineering Programs at University of Malaya Authors: S E Johol and S Mekhilef
	14:50	Title: Effective teaching method for engineering education from student's perspective Authors: H M Mobarak , H Wu and M Hossain
	15:10	Title: How to Enhance Technical Writing Skills of New Generation Engineering Students? Authors: T A Rahman, C Amos and A Rahman
14:10 – 15:30	Session 8B Chair: Dr Vojislav Ilic Room: EB.G.22	
	14:10	Title: Evaluation of the Education System based on the Stratified Sampling Network Method Authors: Wei-Chang Yeh and Chia-Ling Huang
	14:30	Title: Preparing Students for Engineering Success through Improving 3-D Spatial Skills Authors: S A Sorby , B Bowe, and J Mergard
	14:50	Title: STEaMing Ahead with Engagement Author: N Fowler
	15:10	Title: Use of the Force Concept Inventory as a diagnostic tool for the teaching of Engineering Students Authors: T McLeod and R Bhathal
15:30 – 15:45	Conference Closing Room: Building EB, Room 2.02	
15:45 – 16:00	Afternoon Tea Room: Building EB, Room G.02	

RAILWAY STATION SHUTTLE BUS TIMETABLE

ARRIVAL

Parramatta Railway Station to Western Sydney University

Monday November 21, 2016

Parramatta Station (pick up point is Darcy St, Parramatta)	Western Sydney University
5:15pm	5:30pm
5:45pm	6:00pm

Tuesday November 22, 2016 - Thursday November 24, 2016

Parramatta Station (pick up point is Darcy St, Parramatta)	Western Sydney University
7:45am	8:00am
8:15am	8:30am
8:45am	9:00am

DEPARTURE

Western Sydney University to Parramatta Railway Station

Monday November 21 and Tuesday November 22, 2016

Western Sydney University	Parramatta Station (drop off point is Darcy St, Parramatta)
8:30pm	8:45pm
9:00pm	9:15pm

Wednesday November 23, 2016

Western Sydney University	Parramatta Station (drop off point is Darcy St, Parramatta)
5:30pm	5:45pm
6:00pm	6:15pm

Thursday November 24, 2016

Western Sydney University	Parramatta Station (drop off point is Darcy St, Parramatta)
4:00pm	4:15pm
4:30pm	4:45pm

Please note: Regular shuttle bus services will run continuously throughout the day to Parramatta Station as per the normal University shuttle service. For other shuttle bus information please see the conference reception staff.

HOTEL SHUTTLE BUS TIMETABLE

ARRIVAL

Parramatta Hotels to Western Sydney University

Monday November 21, 2016

Novotel Hotel, Parramatta	Mecure Hotel, Parramatta	Western Sydney University (South Campus)
5:15pm	5:30pm	5:45pm

Tuesday November 22, 2016 - Thursday November 24, 2016

Novotel Hotel, Parramatta	Mecure Hotel, Parramatta	Western Sydney University (South Campus)
7:30am	7:45am	8:00am
8:15am	8:30am	8:45am

DEPARTURE

Western Sydney University to Parramatta Hotels

Monday November 21, 2016

Western Sydney University (South Campus)	Novotel Hotel, Parramatta	Mecure Hotel, Parramatta
8:15pm	8:30pm	8:45pm

Tuesday November 22, 2016

Western Sydney University (South Campus)	Novotel Hotel, Parramatta	Mecure Hotel, Parramatta
9:00pm	9:15pm	9:30pm

Western Sydney University to Conference Dinner (Parramatta Park)

Wednesday November 23, 2016

Western Sydney University (South Campus)	Novotel Hotel, Parramatta	Mecure Hotel, Parramatta	Old Government House Parramatta Park
5:30pm	5:45pm	6:00pm	6:15pm
6:00pm	6:15pm	6:30pm	6:45pm

- Return shuttle departing Conference dinner will leave at 10pm for drop off at Hotels.

Western Sydney University to Parramatta Hotels

Thursday November 24, 2016

Western Sydney University (South Campus)	Novotel Hotel, Parramatta	Mecure Hotel, Parramatta
4:00pm	4:15pm	4:30pm

Sponsors

The conference organising committee would like to extend sincere appreciation to the following sponsors for their support of the iCEER2016 conference.

SILVER SPONSORS

The logo for EMONA, featuring the word "EMONA" in a bold, blue, sans-serif font.The logo for guni HAMBURG, featuring the word "guni" in a bold, blue, sans-serif font with a stylized "g", and "HAMBURG" in a smaller, blue, sans-serif font below it.

BRONZE SPONSORS

The logo for FESTO, featuring the word "FESTO" in a bold, blue, sans-serif font.The logo for HARE & FORBES MACHINERYHOUSE, featuring the words "HARE & FORBES" in a bold, red, sans-serif font, and "MACHINERYHOUSE" in a smaller, blue, sans-serif font below it.

ProZ3D Solutions

The logo for TAYLOR, featuring the word "TAYLOR" in a bold, blue, sans-serif font.

Useful Information

Registration & Business Centre

The registration desk will be open during conference hours and is located at:

Monday 21st November 6pm – 8pm:
Female Orphan School, Building EZ Foyer

Tuesday 22nd November – Thursday 24th November 8am – 5pm:
Building EB, Ground Floor Foyer

A business centre is available with access to internet and printers in Building EB, Room G.18 (EB.G.18).

Please call 0452 248 228 for any queries during the conference.

Wi-Fi Access



If you are visiting Western Sydney University from a participating eduroam institution, you can connect to the **eduroam** wireless network using your login credentials (username and password) and security settings from your home institution.

You must enter your full username including domain/realm (e.g., jsmith@inst.edu.au). This may differ to when you access eduroam from your home institution, where you may not be required to enter the domain/realm (@inst.edu.au).

Presentations

It is helpful if presenters can provide a copy of their presentation for pre-loading. This must be provided at least one session before your paper is due to be presented. Please see the registration desk to provide a copy of your presentation.

Food Outlets

- The Bakehouse (Location: Building ER): Coffee, milkshakes, sandwiches, pie salads, cakes, pastries 8am – 4pm
- The Boilerhouse (Location: Building EKB): Stir-fry, Noodles & Rice Dishes 11am – 3pm
- Food Court (Location: Building EN): Coffee, Sandwiches, Juice 8am – 3pm
-

Tours & Attractions

If you are interested in organising or booking local tours please see the conference reception staff that can help direct you to the local tour organisers.

Smoking

To further increase their commitment to providing a healthy, clean air environment for staff, students and visitors, all Western Sydney University premises became completely smoke-free on 1 January 2014. Therefore, students and visitors who smoke on campus may be issued an infringement notice under the Smoke-Free Environment Act, which is currently AUD\$550.

Conference Dinner

The conference dinner will be held on Wednesday 23 November at Lachlan's Old Government House, Parramatta Park from 6.15 pm. Join us for a 3 course banquet dinner where you will enjoy the beautiful history of Parramatta. Tickets are included in the full conference registration but if you would like to attend please purchase dinner tickets from the conference reception staff.

Emergency/First Aid

The security office handles all First Aid and Emergency services on campus.

Location: Building EA at the top of the stairs at the front entrance (north side of the building)

- Emergency Line 1300 737 003
- Security Office 02 9685 9169
- After hours Emergency 02 4736 0300
- Police, Ambulance, Fire 000

Transport

Public Transport – Trains & Ferries

Train services operate from Sydney CBD (East) and West to Parramatta Station at regular intervals.

Ferry service 'F3' is available from Circular Quay (Sydney Harbour) to Parramatta Wharf along the Parramatta River. Please note this wharf is not located close to the campus and delegates would be required to walk from the wharf to a shuttle bus pick-up, or catch a taxi to the campus.

If you require public transport please see the NSW Transport Information website to assist with planning your journey and to ensure that your journey time is not impacted by planned maintenance. See <http://www.transportnsw.info/> for timetables and to plan your trip on all Sydney Public Transport services (train, bus & ferry).

Conference Shuttle Bus

A conference shuttle bus is available to all delegates and will run as a round trip to and from Parramatta Station, Mercure Hotel Parramatta, Novotel Hotel Parramatta and Western Sydney University. The timetable is available on Pages 17 & 18.

Parking

Parking will be available on Parramatta South campus. Please park in blue coloured bays only, as parking in other coloured bays can result in a fine. Parking on Parramatta North campus is available as an overflow car park. There will be a shuttle bus available to transport you to and from Parramatta South campus or there is the option of walking between Parramatta North and Parramatta South campus and takes approximately 10 minutes. A pedestrian bridge is available so you can safely cross James Ruse Drive. Parking permits are available at the Registration Desk.

Taxi

The following Taxi companies are available to delegates:

Taxi's Combined 13 33 00

Premier Cabs 13 10 17

The pick-up location is:

Front Bus Bay

Western Sydney University

Corner of James Ruse Drive & Victoria Road (entrance off Victoria Road)

Rydalmere

- End of Program –

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This image shows a single sheet of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



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