

EE2012

International Conference on Innovation, Practice and Research in Engineering Education

18, 19, 20 September 2012 Coventry University UK

The fifth in this series of popular international conferences will be held in the brand new building of Coventry University's Faculty of Engineering and Computing.

EE2012 is dedicated to enhancing the quality of higher education in all engineering disciplines. It will serve as a forum for sharing innovation and effective practice and will provide delegates with the opportunity to critically and creatively engage with new ideas and research. We are looking forward to an exciting conference with over 120 abstracts submitted to date

The parallel sessions of the conference will include **general papers** (presentation plus questions), **research discussion papers** (short introduction, emphasis on discussion) and **workshops** (activity-based sessions, with emphasis on high levels of participation). Building on EE2010, on the second day of the conference we hope to attract significant student attendance with a student poster session, some student input to papers, and a panel discussion with the title 'How much is an engineering degree worth?'

Keynote speakers

Professor David Radcliffe, Purdue University
Professor Rachel McCrindle, University of Reading

Panel (19 September) will include:

- Professor Julia King, Vice-Chancellor Aston University
- Professor Matthew Harrison, Director of Education, Royal Academy of Engineering
- Professor Helen Atkinson, University of Leicester, President of EPC
- Professor David Dowling, University of Southern Queensland
- Employer, to be confirmed
- Josh Holmes, Student Chair, Faculty of Engineering and Computing, Coventry University

Proceedings will be published with an ISBN. The conference fee includes an electronic copy of the proceedings for delegates.

Conference location

The conference will be held in the new building of the Faculty of Engineering and Computing at Coventry University. The conference will be the first major event to be held in this £55 million building dedicated to innovative engineering education. The University campus is in the city centre within easy walking distance of a wide range of facilities.

Social programme

18 September, Historical walk in Coventry; Reception and buffet in St Mary's Guildhall, one of the finest medieval guildhalls in England

19 September, Conference Dinner, Herbert Art Gallery and Museum

Delegate rates

Earlybird (by 1 August 2012) full conference package including refreshments and evening events (but not accommodation)	£350
Full conference package including refreshments, evening events (but not accommodation)	£395
Day delegate rate	£195

Conference website

<http://cede.lboro.ac.uk/ee2012>



The Centre for
Engineering and
Design Education



The Royal Academy
of Engineering



Engineering
Council



Coventry
University

EE2012

International Conference on Innovation, Practice and Research in Engineering Education

EE2012 | Programme and papers | Contact us

18th - 20th September 2012, Coventry University, UK

Programme and Papers

The final programme with links to all papers is available to [download here](#) as a pdf file. [Click the title of each paper or workshop to view the published paper.](#)

The leader of workshop 140 "The philosophy and pedagogy of practical work for engineering undergraduates and the potential for online practical activities to enhance their experience – an exploratory workshop" has provided some supplementary material which can be [accessed here](#).

Conference proceedings

The conference proceedings for EE2012 - Innovation, Practice and Research in Engineering Education have been published electronically and a copy was provided to all delegates on a USB pen drive. Publication details are as follows:

Edited by the Centre for Engineering and Design Education

Published by Loughborough University

ISBN: 978 1 907632 16 7 (electronic copy of full papers)

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The Panel (19 September) included:

Professor Julia King, Vice-Chancellor Aston University
Professor Matthew Harrison, Director of Education, Royal Academy of Engineering
Professor Helen Atkinson, University of Leicester, President of EPC
Professor David Dowling, University of Southern Queensland, Australia
Professor Paul Ivey, Dean of Faculty of Engineering and Computing, Coventry University
Giridhar Kesavan, student leader, Student-led Projects Scheme, Faculty of Engineering, Imperial College London
Josh Holmes, Student Chair, Faculty of Engineering and Computing, Coventry University

Keynote Speakers

Welcome address by **Professor Madeleine Atkins**, Vice-Chancellor, Coventry University

David Radcliffe, Purdue University, USA. (David's presentation can be [viewed here](#) as a pdf file)

Professor Rachel McCrindle, University of Reading

Contact us

For any queries on this series of conferences, please contact [The Centre for Engineering and Design Education](#) at Loughborough University. .

Organised by



The Centre for Engineering and Design Education

Hosted by



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And supported by:



Previous conferences

- EE2010
- EE2008

This Conference is organised by The Centre for Engineering and Design Education. Conference venue: Coventry University

EE2012 Day 1 Research Focus : TUESDAY 18th September am**10.00 - 10.45 Conference Registration****10.50 Conference Open - John Davies****11.00 - 11.15 Welcome address – Professor Madeleine Atkins, Vice-Chancellor, Coventry University****11.15 – 12.00 Keynote address: Professor David Radcliffe, Purdue University, USA
“Transforming Engineering Education based on Educational Research and Scholarship” Chair: Ian Dunn****12.00 - 13.00 - Parallel 1 - Research Discussion Papers****Chair: Liz Monk**

RDP148 International Scholars' Pathways to Engineering Education Research Bill Williams and José Figueiredo

RDP196 Engineering Education for the 21st Century: Scholarship, Synergy and Student Success. Robin Clark and Jane Andrews

12.00 - 13.00 - Parallel 2 - E-learning**Chair: Jenny Narborough**

GP151 Enhancing Student Learning Experience through a novel Electronic Coursework Assessment and Feedback Management System. Shun Ha Sylvia Wong, Jonathan Taylor and Tony Beaumont.

GP146 Designing e-learning environment to encourage student centred learning. Arkhadi Pustaka and Herman Saksono

GP144 Development and assessment of a VLE for Civil Engineers. Gareth Whittleston and Fred Sherratt

12.00 - 13.00 - Parallel 3 - Supporting and mentoring students**Chair: Sarah Wilson-Medhurst**

GP187 Academic Development and Student Support Contextualised for Engineering Subject Disciplines. Barry Beggs, Elaine Clafferty and James Canning

GP201 E-mentoring for employability. Andrea Wheeler, Simon Austin and Jacqui Glass

GP173 Using part-time students as mentors. John Davies

12.00 - 13.00 - Parallel 4 - Supporting transition**Chair: Tony Hodgson**

GP167 Inter-module coursework sharing: practical assessment of benefits to staff and students. Christopher Smith, Nerea Etura Luque and Ian Wilson.

GP132 An investigation into the suitability of preferred A-Level subjects as admission criteria for two specific engineering degrees. Paul Hermon and Jonathan Cole

GP131 Supporting transition, engagement and retention in first year engineering. Caroline Crosthwaite and Lydia Kavanagh

13.00 – 14.00 Lunch**EE2012 Day 1: TUESDAY 18th September pm****14.00 - 15.30 - Workshop 1**

W176 An Interactive Project Management Lecture. Andrew Bell and Anthony Olomolaiye

14.00 - 15.30 - Workshop 2

W203 Designing and researching collaborative learning in engineering education. Marjahan Begum and Peter Demian

14.00 - 15.30 - Workshop 3

W140 The philosophy and pedagogy of practical work for engineering undergraduates and the potential for online practical activities to enhance their experience – an exploratory workshop. Mark Endean, Alec Goodyear, Jon James, Jan Kowal and Keith Williams

14.00 - 15.30 - Engineering Education Research SIG - Robin Clark**15.30 – 16.00 Afternoon Tea****16.00 - 17.30 - Parallel 5 - Research Discussion Papers****Chair: Ian Dunn**

RDP139 Evaluation of residential school activity 'Product re-engineering for enhanced end-of-life performance'. Mark Endean, Kath Clay and Stephen Burnley

RDP202 A Framework for Investigating Collaborative Learning. Marjahan Begum, Peter Demian, Matthew Lammi and Woei Hung

RDP199 Unemployment of Engineering Graduates: The Key Issues. Helen Atkinson and Martin Pennington

16.00 - 17.30 - Parallel 6 - Internationalisation**Chair: Kamel Hawwash**

GP160 International student integrated project work using virtual teams comprised of students from the United Kingdom and Canada. Stephen Austin and Robby Soetanto

GP189 Assessment for ALL: an international student perspective. Gill Cooke and Phil Lewis

GP145 Engineering Student Voices on Intercultural Integration: Harmony or Discord? Abel Nyamapfene, Alice Bond, Guy Pearce and Katrina Pamatmat

GP205 Transnational Education and Engineering Accreditation. Ian Harrison and Kay Bond

16.00 - 17.30 - Parallel 7 – Projects in engineering education**Chair: Ray Farmer**

GP171 Activity-Led Learning Development in Aerospace at Coventry University. Caroline Lambert and Alex Harrison

GP155 Project Based Learning in a Large Class – A Case Study In Technical Communication for Engineers. Jonathan Pocock

GP135 "All hands on deck": Collaborative building design education for architects and engineers. Anh L.H. Tran, Julie Mills, David Morris and Michael Phillips

GP149 Using the Engineering Design Cycle to Develop Integrated Project Based Learning in Aerospace Engineering. Gillian Saunders-Smits, Paul Roling, Vincent Brügemann, Nando Timmer and Joris Melkert.

18.15 Coventry guided walking tour. Meet on Cathedral steps (Priory Street). No need to book**19.45 Conference Reception/ Buffet (dress: casual), St Mary's Guildhall, Bayley Lane, Coventry, CV1 5RN**

EE2012 Day 2 Student Focus: WEDNESDAY 19th September am

9.15 - 10.45 - Parallel 1 - Developing work-based learning		Chair: Fiona Lamb
GP169	Engineering Gateways work-based degrees: challenges and opportunities.	Deborah Seddon
GP200	Supporting the attainment of professional attributes in a work based learning programme.	Noel Perera and Roger Penlington
GP134	Work-based HE pathways for the electrical power engineering industry.	Malcolm Booth, Nagi Fahmi and Steve Luke
GP172	The Experiences of Developing a Workbased MSc as Part of the Engineering Gateways Programme.	Patrick Barber
9.15 - 10.45 - Parallel 2 - Supporting skills development		Chair: Helen Atkinson
GP161	University-led innovative and inspirational engineering education.	Alison Halstead and Lee Kilgour
GP184	Developing a strategy to foster fluent skills transfer and to encourage a research and practical- application ethos amongst young undergraduate engineers in the UK.	Raymond Huw Fox
GP150	Reflection at work: making a positive difference to PDP modules.	Michael Hush
GP207	Education for professional engineering practice – becoming 'wicked'	Sarah Wilson-Medhurst, Ella-Mae Hubbard, John Parkin, Chris Short and Mike Bramhall
9.15 - 10.45 - Parallel 3 - Encouraging and using feedback		Chair: Matthew Harrison
GP152	A Quest for Helpful Feedback to Programming Coursework.	Shun Ha Sylvia Wong and Tony Beaumont
GP129	Construction and student feedback of a 'transition to university' online support course in mathematics for STEM students.	Stephen Lee and Ken Morgan
GP127	Feedback for Enhanced Student Performance: Lessons from Simple Control Theory.	Christopher Benjamin
GP185	Identification of generic errors for effective formative feedback in Energy Studies thematic area of Mechanical Engineering.	Reaz Hasan

10.45 – 11.30 Coffee and Student Poster Session**11.30 - 13.00 - Panel discussion: "How much is an engineering degree worth?"****Chair: Matthew Harrison****Panel members:**

Prof. Dame Julia King (Vice-Chancellor Aston University), Prof. Matthew Harrison (Director of Education, Royal Academy of Engineering), Prof. Helen Atkinson (University of Leicester, President of EPC), Prof. David Dowling (University of Southern Queensland, Australia), Josh Holmes (Student chair, Faculty of Engineering and Computing, Coventry University), Prof. Paul Ivey (Dean of Faculty of Engineering and Computing, Coventry University) employer (tbc)

(including prize giving for student posters)**13.00 – 14.00 Lunch**

EE2012 Day 2: WEDNESDAY 19th September pm**14.00 - 15.30 - Workshop 5**

W180	Workshop on Using WebPA to peer assess group work.	Tim Davis and Stephen Austin
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14.00 - 15.30 - Workshop 6

W191	Creating Diagnostic Tools to Improve Learning in Diverse Student Groups.	Ursula Canton and Roberto Ramirez-Iniguez
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14.00 - 15.30 - Workshop 7

W117	Experiences of setting up student-led, extra-curricular, employer-focused activity.	Fiona Lamb, Glynis Perkin and Alison Ahearn
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14.00 - 15.30 - Workshop 8

W143	The Creation of a Risk Education Network	Nicola Stacey and Jo Bowen
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15.30 - 16.00 Afternoon Tea

16.00 - 17.00 - Parallel 4 - Professional competencies		Chair: Deborah Seddon
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GP130	Embedding Professional Experience and Employability into Engineering Sandwich Degrees.	Anne Nortcliffe
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GP194	Using the DYD Stakeholder Consultation Process to connect with practitioners to define a set of graduate capabilities for a program.	David Dowling
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GP136	Assessment of Professional Competencies and Mobility of Engineers in Europe.	Abheesha Busawon, Roger Penlington and Noel Perera
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16.00 - 17.00 - Parallel 5 - Enhancing practice		Chair: John Dickens
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GP174	Part-time students in the workforce - enhancing practice in course provision.	John Davies, Brian Counter, Mark Davison, Steve Luke and Peter Mills
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GP154	Towards a framework for successful learning outcomes in industrial visits.	Abel Nyamapfene
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GP193	Extraordinary student experiences: how to meet rising demand for IAESTE work placements.	Alison Ahearn, Kevin Quinn, Adrian Hawksworth and Liz Arriens
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16.00 - 17.00 - Parallel 6 - Curriculum evaluation and development (1)		Chair: Alison Halstead
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GP192	Revisiting a transformative approach to engineering education.	Patricia Kelly, Elizabeth Smith and Judith Ford.
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GP168	Curriculum Design and Higher Order Skills: Challenging Assumptions.	Caroline Crosthwaite, Lesley Jolly, Lydia Kavanagh, Lyn Brodie, Laurie Buys and Jennifer Turner
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GP120	Jaguar Land Rover Learning Resource Leaders: a pilot scheme to improve the learning space and environment of STEM students.	Paul Brack, Mike Clifford, Sarah Friend, Umaru Tarawally and Ngoc Tran
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16.00 - 17.00 - Parallel 7 - Recruitment and outreach		Chair: Rachel Horn
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GP197	"No One Said Girls Could Do Engineering": A fresh look at an old problem.	Jane Andrews and Robin Clark
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GP164	Technology Based Mentoring; working with the Imagineering Organisation to develop professional skills through engaging with STEM based outreach activity.	Martin Lander
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GP128	Inspiring Engineers? Student ambassadors and the importance of learning contexts in HE outreach activity.	Clare Gartland
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**19.00 for 19.45 Conference dinner (dress: smart casual),
Herbert Art Gallery and Museum, Priory Street, Coventry, CV1 5QP**

EE2012 Day 3 Education Practice Focus: THURSDAY 20th September am

**09.15 - 09.50 Keynote address by Professor Rachel McCrindle, University of Reading
"Reward and recognition of excellent practice"**

Chair: John Dickens

10.00 - 11.00 - Parallel 1 - Enhancing the student experience

Chair: Mike Bramhall

GP122	Promoting the use of clickers across a whole engineering faculty: how, why and is it worth it?	Patricia Murray, John Anthony Rossiter and George Panoutsos
GP163	Excellent tutoring; excellent prospects.	Julie Balfour, Anthea Connolly and Martyn Clark
GP175	Developments on a BEng Electrical and Electronic Engineering programme at Coventry University.	Robert Jinks, Stephen Bate, Nigel Poole and Panos Abatis

10.00 - 11.00 - Parallel 2 - Curriculum evaluation and development (2)

Chair: Liz Miles

GP121	Is less more? A cross-faculty evaluation of student attitudes to lectures.	Mike Clifford, Helena Richardson, Christopher Brignell and Liz Monk
GP124	Are students competent, active and constructive partners in the improvement of teaching and learning? A text analysis of contributions to idea contests.	Katharina Schuster, Ursula Bach, Anja Richert and Sabina Jeschke
GP198	Do different learning contexts, processes and environment affect perceptions, dispositions and approaches to learning?	Roger Penlington, Jenna Tudor, Tom Joyce and Jamie Thompson

10.00 - 11.00 - Parallel 3 - Mathematics in engineering education

Chair: Glynis Perkin

GP170	Making Structural Analysis fun to learn: challenges and opportunities.	Messaoud Saidani and Abdussalam Shibani
GP142	Mathematical skills of new entrants to engineering courses.	Arnaud Marotin and Richard Thomas
GP179	Mathematics support past, present and future.	Duncan Lawson, Tony Croft and Dagmar Waller

10.00 - 11.00 - Parallel 4 - Student engagement

Chair: Michael Grove

GP147	Student Projects: Preparing Future Engineers through Collaboration with Industry.	Dawn Evans and Abel Nyamapfene
GP178	Engaging students in real-life project delivery: success or failure of a competitive bid?	Christopher J.M. Smith, Anthony Olomolaiye, Lydia Adigun and Steve Martin
GP138	It's not just for Boys.	Valerie Allen

11.00 - 11.30 Coffee

11.30 - 13.00 - Parallel 5 - Research Discussion Papers

Chair: Robin Clark

RDP125	Richness, responsiveness and relationship: Using rich media materials to enhance the teaching of core concepts.	Fiona Saunders and Ian Hutt
RDP166	An investigation into the influence of cultural background on the mathematics achievements of international Engineering students.	Geoffrey Grenyer
RDP153	A study of a multi-discipline built environment project.	Ursula Rutherford, Stephen Austin, Sarah Wilson-Medhurst and John Davies

11.30 - 13.00 - Parallel 6 - Global dimensions of engineering education

Chair: Adam Crawford

GP165	A global curriculum and a global working environment.	Patricia Murray and Rachel Horn
GP186	What do students understand by the term 'Humanitarian Engineering'?	Simon Hill and Liz Miles
GP183	Community led technology co-creation in engineering education.	Alistair Cook and Ashley Thomas
GP137	Teaching ethics to engineering undergraduates - lessons learned and a guide for lecturers: perspective from an English University.	Reaz Hasan

11.30 - 13.00 - Parallel 7 - Developing resources to support engineering education

Chair: Melanie King

GP119	Developing tools for teaching Chemical Engineering unit operation design.	Rachael Elder
GP133	Role of commercial software in teaching finite element analysis at undergraduate level: a case study.	Faiz Shaikh
GP126	A networked demonstrator help request system for laboratory work.	Dave Pearce

11.30 - 13.00 - Parallel 8 - Postgraduate education

Chair: Duncan Lawson

GP204	Graduate education for leadership and organisational change in Sustainable Development.	Heather Cruickshank, Charles Ainger and Richard Fenner.
GP177	How green is my project? Developing a curriculum for environmental education of civil engineers.	Brian Reed
GP141	Manufacturing Excellent Engineers: Skill development in a Masters Programme.	Judith Shawcross
GP195	ALL for Masters: Exploring effective delivery of Activity Led Learning for taught postgraduate students.	Irene Glendinning and Anna Michalska

13.00 - 14.00 Lunch

EE2012 Day 3: THURSDAY 20th September pm

14.00 - 15.30 - Workshop 9

W118	Efficient and effective teaching and assessment with MATLAB	Anthony Rossiter, Stephen Lynch, Victor Becerra and Alan Irving
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14.00 - 15.30 - Workshop 10

W190	Delivery of an Engineering curriculum over international campuses	Tom Cross
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14.00 - 15.30 - Workshop 11

W123	Using the DYD Stakeholder Consultation Process to define Graduate Capabilities for education programs in your discipline	David Dowling
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14.00 - 15.30 - Workshop 12

W158	Experiential learning using a computer-based virtual reconstruction of an accident investigation.	Nicola Stacey, Nick Underwood, Graham Schleyer and Olanrewaju Okunribido
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**15.30 – 16.00 Closing address - John Davies
followed by Afternoon Tea**