



## PROGRAMME

### TUESDAY 11 July 2023

10h00	<b>Workshop 1</b> <b>Writing for publication in engineering education research</b> Prof Bruce Kloot <i>Editor: Southern Journal of Engineering Education, CREE, UCT</i>	Royal Clansmann
11h30	<b>Refreshment break</b>	
11h45	<b>Workshop 2</b> <b>ECSA professional registration for academics</b> Prof Trevor Haas <i>Engineering Registration Consultants, SU</i>	Royal Clansmann
13h15	<b>Lunch</b>	
14h00	Room check-in	
14h30	<b>Workshop 3</b> <b>Socially responsible projects for engineering students</b> Robyn Clark <i>Educational consultant with Engineers without Borders</i>	Royal Clansmann
16h00	<b>Close</b>	
17h00	<b>Welcome cocktail function</b> With Silver sponsors: Juta & PPS	GlenPalms

# WEDNESDAY 12 July 2023

08h30	<b>Welcome</b> Dr Keith Jacobs <i>President, SASEE</i>		Royal Clansmann	
08h40	<b>SASEE BGM and Elections</b>		Royal Clansmann	
09h15	<b>Opening address</b> Prof Ben van Wyk (DVC-T&L) & Prof Grace Kanakana-Katumba (Dean EBE), TUT <i>Chair: Deborah "Debby" Blaine</i>			
09h30	<b>Keynote speaker</b> <b>Design has become too important to be left only to the designers</b> Richard Perez <i>UCT Hasso Plattner d-school Afrika</i> <i>Chair: Brandon Collier-Reed</i>		Royal Clansmann	
10h20	<b>Book presentation with Juta</b> Engineering Education in South Africa with author Lorraine Doherty		Royal Clansmann	
10h30	<b>Refreshment break with book signing at Juta desk</b>			
	<b>Session 1A</b> <b>Student learning &amp; success</b> Chair: Karin Wolff	Royal Clansmann	<b>Session 1B</b> <b>Skills, attributes &amp; competencies</b> Chair: Caroline Khoathane	Greenwells
10h50	<i>"Newton stays Newton!": Engineering students' perceptions of decolonised engineering education</i> <u>Zach Simpson</u> , J Meyer and S von Solms		<i>Engineering knowledge in practice: Two studies in civil engineering</i> <u>Nicky Wolmarans</u>	
11h10	<i>Learning to use the Grounded Theory method to explore student success in African contexts</i> <u>Helen Inglis</u> , D Mogashana and E Matemba		<i>Critical awareness and counter narratives: Exploring students' views about sustainability</i> <u>Corrinne Shaw</u> and B Kloot	
11h30	<i>Using crib sheets to understand student approaches to learning in an engineering context</i> <u>Teresa Hattingh</u>		<i>Engineering Undergraduates' Conceptions of Learning to Think Critically</i> <u>Liezle Boshoff</u> , Z Simpson, and B Collier-Reed	
11h50	<i>Automated flow detection in education: A methodology to measure flow from student feedback</i> <u>Leon Burger</u>		<i>Transformation of a practical module from a social constructivist perspective to enhance graduate employability: An example</i> <u>Annegret Stark</u> and A Philipp	
12h10	<b>Break</b>			

	<b>Session 2A</b> <b>Graduate Attributes</b> <b>Chair: Teresa Hattingh</b>	Royal Clansmann	<b>Session 2B</b> <b>Student learning &amp; success</b> <b>Chair: Eudes Tshitshonu</b>	Greenwells
12h20	<i>Graduate attributes: Reviewing agency, agility, critical thinking, flexibility, purpose, and resilience in engineering education</i> <u>Kapil Moothi</u>		<i>Enabling engineering student learning in online and blended format in the African context: A scoping literature review</i> <u>Anita Campbell</u> , A Gwynne-Evans, P Padayachee, et al.	
12h35	<i>Activities suitable for the development of graduate attributes among senior engineering students</i> <u>Arthur James Swart</u>		<i>An analysis of the literature on engineering student attrition in the South Africa higher education system</i> <u>Brandon Collier-Reed</u> , K D Nyembwe, T P Maphumulo, et al.	
12h50	<i>ECSA Alignment of Graduate Attributes with Professional Competencies</i> <u>Nkosinathi Khoza</u> , and N Wolmarans		<i>Learning theories for improving teaching and learning</i> <u>Edward Kurwakumire</u>	
13h05	<i>Designing an activity that supports the development of critical thinking</i> <u>Liezie Boshoff</u>		<i>Authentic assessment practices in applied thermodynamics can enhance well-being among chemical engineering students</i> <u>Kapil Moothi</u>	
<b>13h20</b>	<b>Lunch</b>			
	<b>Session 3A</b> <b>Employability</b> <b>Chair: Ferdie Gerber</b>	Royal Clansman	<b>Session 3B</b> <b>Online &amp; virtual learning</b> <b>Chair: Disaapele Mogashana</b>	Greenwells
14h10	<i>The engineering management framework for soft skills development</i> <u>Khanyo Hlatshwayo</u> , A Malan and J C Pretorius		<i>Engineering students' move to online learning during Covid-19 at a University of Technology</i> N Mkonto, <u>Luvuyo Kakaza</u> , and E Esambe	
14h30	<i>Collaborative teaching, training and learning for 3rd year students with SMMs – A case study in Mechanical Engineering Technology</i> <u>Samuel Loyiso Gaibani</u>		<i>Online, hybrid and face-to-face teaching: Learning from engineering students' experiences during and post Covid</i> <u>Anita Campbell</u> , D Mogashana, and M Basitere	
14h50	<i>Towards an ubuntu pedagogy: Building engineering employability skills</i> <u>Karin Wolff</u> , A Basson, C Basson, et al.		<i>Understanding Student Perspectives of a Hybrid, Integrative Approach in a Theory-Rich Module</i> <u>Melody Neaves</u> , D Blaine, and K Wolff	
14h10	<i>Engineering soft skills development for employability</i> <u>Khanyo Hlatshwayo</u> and J C Pretorius		<i>Engineering students' move to online learning during Covid-19 at a University of Technology: Enablements and constraints towards socio and academic inclusivity</i> N Mkonto, <u>Luvuyo Kakaza</u> , and E Esambe	
<b>15h20</b>	<b>Refreshment break</b>			

15h40	<b>Invited speaker</b>		Royal Clansmann
	<b>Integrated and Connected Engineering Math</b> Dr Matheus Oliveira De Andrade University College London, UK Chair: Karin Wolff		
16h20	<b>Break</b>		
	<b>Juta Prizegiving</b>		
	<b>Session 4A</b> <b>Engineering &amp; Industry</b> Chair: Mangimalay "Maggie" Chetty Royal Clansman	<b>Session 4B</b> <b>Engineering education in practice</b> Chair: Bruce Kloof Greenwells	
16h30	<i>The role of universities in preparing industry to mentor WIL students so that the outcomes are aligned with learner guide's expectations</i> <u>Samuel Gqibani</u> , A Maile, S Xaba, et al.	<i>Effects of machine learning and artificial intelligence in an academic environment</i> <u>Oluwaseye Samson Adedaja</u> , E Sadiku, and Y Hamam	
16h45	<i>The engineering skills pipeline</i> <u>Brandon Collier-Reed</u> , K D Nyembwe, T P Maphumulo, and A Dienga	<i>Teaching value chain of prior knowledge, theory and practice in higher education engineering studies and the industry</i> <u>Witske Meyer</u> , and K Kapp	
17h00	<i>The future impact of engineering education in South Africa</i> <u>Patience Nondumiso Mofokeng</u> , and L O Babalola	<i>Exploring the implications of decolonization and cognitive justice for the future of engineering education practice</i> <u>Kapil Moothi</u>	
17h15	<i>Entrepreneurial mindset for future engineers through innovative and sustainable research: A review</i> <u>Idowu David Ibrahim</u> , E R Sadiku, Y Hamam, et al.	<i>Automating the Accreditation Preparation Process: Application of Machine Learning</i> <u>Randhir Rawatlal</u>	
17h00	<b>Close</b>		
18h30	<b>Conference Gala Dinner</b>		Glencove
	With Gold Sponsors Opti-Num Solutions and Qfinsoft/Ansys		

## THURSDAY 13 July 2023

<b>Session 5A</b> <b>Student experience</b> Chair: <b>Annegret "Ann" Stark</b>		Royal Clansmann	<b>Session 5B</b> <b>First year experience</b> Chair: <b>Anita Campbell</b>		Greenwells
08h30	<i>Lessons learned from implementing a mentorship programme</i> P Siima, A Maile, <u>Samuel Gqibani</u> , and H Steenkamp		<i>"You don't know anything until you know everything": Threshold concepts in first year student narratives about engineering</i> <u>Helen Inglis</u> , and Z Simpson		
08h50	<i>Classification of key criteria in the development of computational thinking skills in engineering students</i> <u>Suvendi Rimer</u> , and K Ouahada		<i>First year engineering drawings summer school: Back to basics case study</i> <u>Kristiaan Schreve</u> , and K Wolff		
09h10	<i>Me as an engineer: Career aspirations and expectations of South African first-generation engineering students</i> F Harris, <u>Bruce Kloot</u> , and R Smit		<i>Closing the knowledge gap from conceptual to practical computer programming knowledge and skills: Activity systems of introductory computer programming courses</i> <u>Wiseman Nyembe</u> , N Wolmarans, and K Wolff		
09h30	<i>Bachelor of Engineering Technology and Diploma students' perceptions of success influences and potential retention</i> <u>Ann Lourens</u> , and C Mapaling		<i>Investigating first-year engineering students' development of digital agency in a digitally mediated learning environment</i> L Ganduri, <u>Corinne Shaw</u> , and B Collier-Reed		
<b>09h50</b>	<b>Refreshment break</b>				
<b>Session 6A</b> <b>Assessment</b> Chair: <b>Ann Lourens</b>		Royal Clansmann	<b>SASEE workshop</b> <b>Develop your extended abstract into a full paper</b>		Greenwells
10h10	<i>Transfer of knowledge and skills from junior to senior years: Getting the fundamentals right</i> <u>Whisper Maisiri</u> , and W Van Niekerk		Facilitators: Deborah Blaine, SASEE, SU Teresa Hattingh, REEN, UJ Helen Inglis, REEN, UP Karin Wolff, SASEE, SU		
10h30	<i>Grading variability in software design assessments: Human versus artificial intelligence</i> <u>Antonie Smith</u> , C Pietersen, L Van Wyk, and B J Van Wyk				
10h50	<i>An Alternative Approach to Automatic Question Generation and its Impact on Education and Evaluation</i> <u>Warren du Plessis</u>				
11h10	<i>Application of the project/problem-based learning in engineering education process</i> <u>Zhongjie Huan</u>				
<b>11h30</b>	<b>Break</b>				
11h40	<b>Workshop with Opti-Num Solutions: Computational Thinking Instruction and Learning in Southern Africa</b> Royal Clansmann Facilitator: Jon Esteves Opti-Num Solutions				

13h10	<b>Lunch</b>	
14h00	<b>Keynote speaker</b>	Royal Clansmann
	<b>A 360 degree look at your critical skills that give you energy, sustainability and the edge in your work</b> Sue Fuller-Good <i>Energy Incubator</i> Chair: Deborah "Debby" Blaine	
15h30	<b>Refreshment break</b>	
15h50	<b>Panel Discussion: ECSA Identification of Work for Engineers – Implications for Academia</b> Facilitator: Prof Brandon Collier-Reed, <i>SASEE, UCT</i> Panelists: Dr Franciska Bothma (ECSA) Ms Nivashnee Naidoo (ECSA), Dr Lelanie Smith (UP/IEC), Dr Keith Jacobs (SASEE/ECSA), Prof Grace Kanakana-Katumba (ECSA Deans' Forum, Dean TUT)	Royal Clansmann
16h50	<b>Close</b>	