



Graduation Programme

The Future. Reimagined.



**Welcome to the
Graduation Ceremony
of the
University of Johannesburg
21 May 2019**

**Welkom by die
Gradeplegtigheid
van die
Universiteit van Johannesburg
21 Mei 2019**

**Le a Amogelwa
Moletlong wa Dikapešo wa
Yunibesithi ya Johannesburg
21 Mopitlo 2019**

**Niyamukelwa
eMcimbini wokweThweswa kweZiqu
weNyuvesi yaseJohannesburg
21 kuNhlaba 2019**

UNIVERSITY OF JOHANNESBURG

CHANCELLOR

Prof NS Ndebele
BA (Lesotho), MA (Cambridge UK), PhD (Denver USA)

SENIOR OFFICE-BEARERS OF THE UNIVERSITY

VICE-CHANCELLOR AND PRINCIPAL

Prof T Marwala
BS Eng (Case Western Reserve USA), MEng (UP), PhD (Cambridge UK)

DEPUTY VICE-CHANCELLOR ACADEMIC

Prof A Parekh
BA, BA Hons, MA (UDW), MA (Kansas USA), DPhil (UDW)

DEPUTY VICE-CHANCELLOR: RESEARCH AND INTERNATIONALISATION

Prof S Sinha
BEng, MEng, PhD (UP)

REGISTRAR

Prof IC Burger
BA, HEd, BA Hons, MA, PhD (RAU)

CHIEF FINANCIAL OFFICER

Ms N Mamorare
BCom (Rhodes), BCom Hons (UKZN), CA (SA)

CHIEF PEOPLE OFFICER

Ms KC Mketi
BA (Bophut), BA Hons (RAU), MBL (Unisa)

CHIEF OPERATING OFFICER

Prof A Swart
NDip, NHDip (TWR), BEd, MEd (RAU), DTech (TWR)

GENERAL COUNSEL

Prof PH O'Brien
BCom, LLB, LLM, LLD (RAU)

SENIOR EXECUTIVE DIRECTOR IN THE VICE-CHANCELLOR'S OFFICE

Dr N Vukuza
BA (Fort Hare), BA Hons (Rhodes), DTE (UNISA), MA (Wits), PhD (Stellenbosch)

EXECUTIVE DEANS

COLLEGE OF BUSINESS AND ECONOMICS

Prof D van Lill
BSc, BSc Hons, MSc, PhD (US)

FACULTY OF ART, DESIGN AND ARCHITECTURE

Prof F Freschi
BAFA (Wits), BA Hons (UCT), PhD (Wits)

FACULTY OF EDUCATION

Prof SJ Gravett
BA, HEd (PU for CHE), BEd, MEd, DEd (RAU)

FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT

Prof DJ Mashao
BSc Eng (UCT), MSc Eng (UCT), MSc AM (Brown, USA), PhD (Brown, USA)

FACULTY OF HEALTH SCIENCES

Prof S Khan
BSc, BSc Hons, MSc, PhD (UWC)

FACULTY OF HUMANITIES

Prof AB Broadbent
BA, BA Hons, MPhil, PhD (Cambridge UK)

FACULTY OF LAW

Prof LG Mpedi
B Juris, LLB (Vista), LLM (RAU), LLD (UJ)

FACULTY OF SCIENCE

Prof D Meyer
BSc, BSc Hons, MSc (RAU), PhD (California USA)

MEMBERS OF COUNCIL

CHAIRPERSON

Mr MS Teke

DEPUTY CHAIRPERSON

Dr Y Ndema

MEMBERS

Prof H Abrahamse
Mr FM Baleni
Ms S Dlamini
Ms K Gugushe
Prof D Hildebrandt
Ms X Kakana
Mr G Khosa
Ms B Madikizela
Mr M Mahlasela
Prof T Marwala
Mr T Mati
Ms Z Matlala
Ms BJ Memela-Khambula
Prof A Parekh
Dr WP Rowland
Prof A Strydom
Dr M Tom

Programme

Tuesday, 21 May 2019 at 17:00

To ensure good order during the ceremony all those present are requested to leave the Auditorium only after the ceremony has been concluded.

The academic procession enters the Auditorium and the members of the procession take their seats on the stage.

The choir sings Gaudeamus Igitur (or a CD is played) while those present remain standing.

The Chancellor constitutes the congregation.

Choir.

Welcome.

The relevant Executive Dean presents the candidates to the Chancellor for the conferment of a degree/diploma/certificate.

Singing of the National Anthem.

The Chancellor dissolves the congregation.

The academic procession leaves the Auditorium while those present remain standing.

Lenaneo

Labobedi, 21 Mopitlo 2019 ka 17:00

Go kgonthiša gore dilo di sepela ka tshwanelo nakong ya moletlo, bohle bao ba tlilego moletlong ba kgopelwa go tšwa ka Holong ya kopano feela ka morago ga ge moletlo o phethilwe.

Sehlopha sa dirutegi se tsena ka Holong ya kopano gomme maloko a sehlopha se a dula ditulong tša ona sefaleng.

Khwaere e opela Gaudeamus Igitur (goba CD e tlo bapalwa) mola bao ba lego gona ba tšwela pele go ema.

Mokhanseliri o kopanya phuthego.

Khwaere.

Dikamogelo.

Hlogophethiši ya maleba ya lefapha e hlagiša dialoga go Mokhanseliri gore di newe tikrii/diploma/setifikeiti.

Go opelwa ga Koša ya Setšhaba.

Mokhanseliri o phatlalatša phuthego.

Sehlopha sa dirutegi se tšwa ka Holong ya kopano mola bao ba lego gona ba tšwela pele go ema.

Program

Dinsdag, 21 Mei 2019 om 17:00

Ter wille van die ordelike verloop van die plegtigheid
word alle aanwesiges vriendelik versoek
om die Ouditorium nie voor die einde van die plegtigheid te verlaat nie.

Die akademiese proses kom die Ouditorium binne en neem op die verhoog plaas.
Die koor sing Gaudeamus Igitur (of 'n CD word gespeel) terwyl die aanwesiges staan.

Die Kanselier stel die kongregasie saam.

Koor.

Verwelkoming.

Die betrokke uitvoerende dekaan stel die kandidate aan die Kanselier voor vir die
toekenning van 'n graad/diploma/sertifikaat.

Sing van die volkslied.

Die Kanselier ontbind die kongregasie.

Terwyl die aanwesiges bly staan, verlaat die akademiese proses die Ouditorium.

Uhlelo

uLwesibili, 21 kuNhlabha 2019 ngele-17:00

Ukuze kuqinisekwe ukuthi konke kuhamba kahle ngesikhathi somcimbi, bonke abakhona
bacelwa ukuba baphume eHholweni kuphela lapho umcimbi usuphuthuliwe.

Udwendwe lezifundiswa lungena ehholweni bese amalungu odwendwe ahlala phansi
esiteji.

Ikwaya icula i-Gaudeamus Igitur (noma kudlalwa iCD) ngalenkathi labo abakhona
besamile.

UShansela uhlanganisa ibandla.

Ikwaya.

Ukwamukelwa.

Izinhloko Eziyiziphathimandla ezithintekayo zethula abafundi kuShansela weNyuvesi
ukuze bathole idigiri/idiploma/isitifiketi.

Kukulwa iHubo Lesizwe.

Gaudeamus Igitur

Gaudeamus igitur,
Juvenes dum sumus;
Post iucundum iuventutem,
Post molestam senectutem
Nos habebit humus.

Vivat academia,
Vivant professores,
Vivat membrum quodlibet,
Vivat membra quaelibet;
Semper sint in flore!

English

Let us rejoice, therefore,
While we are young.
After a pleasant youth
After a troubling old age
The earth will have us.

Long live the academy!
Long live the professors!
Long live each student;
Long live the whole fraternity;
For ever may they flourish!

Sesotho sa Leboa

Ka gona, a re thabeng,
Re sa le ba bafsa.
Ka morago ga bofsa bjo bo bose
Ka morago ga go tšofala mo go nago le
mathata
Lefase le tla ba le rena.

Phela thuto phela!
Phelang diprofesa phelang!
Phelang baithuti phelang;
Phela kagišano ka botlalo phela;
O ka re ba ka phela gabotse goyagoile!

Afrikaans

Laat ons dan vrolik wees,
Terwyl ons jonk is;
Na 'n aangename jeug.
Na 'n onaangename oudag,
Sal die aarde ons hou.

Lank lewe die universiteit,
Lank lewe die professore,
Lank lewe elke student,
Lank lewe al die studente,
Mag hulle vir ewig hul jeug behou!

Zulu

Ngakho, masithokoze
Sisebasha nje.
Emva kobumnandi bobusha
Emva kwezinkinga zobudala
Umhlaba uzosithatha.

Phambili ngemfundo!
Phambili boSolwazi!
Phambili nakuwe mfundi;
Phambili ngenhlangano yonke;
Maziqhubeke ngonaphakade!

QUALIFICATIONS

1. National Diploma (NDip)

Baloyi, Engetani Broosely (Building)
Boya, Mapula Tumelo (Engineering: Chemical)
Busakwe, Nompendolo (Operations Management)
Chiloane, Dineo (Operations Management)
Davhula, Murunwa Cathy (Building)
Dikgale, Kgolofelo (Building)
Ilunga, Ketsia Lusamba (Operations Management)
Johnson, Sello Stephen (Management Services)
Keromeng, Clement (Building)
Ketelo, Alicia Nosiphathise (Engineering: Chemical)
Khumalo, Khayelihle Nkanyiso (Building)
Khumalo, Memory (Engineering: Chemical)
Kubeka, Andile (Building)
Kunene, Mbuso Sifiso (Building)
Lebatla, Thabang (Building)
Lima, Mpilwenhle (Building)
Mabena, Sandile Kenneth (Building)
Mabetoa, Tobola Shane (Engineering: Chemical)
Mabula, Lesego (Operations Management)
Mabunda, Rivoningo (Building)
Machava, Joseph Boris (Operations Management)
Madinane, Makaziwe Nosihle (Town and Regional Planning)
Majuba, Fortunate Chiluva (Operations Management)
Makgae, Aplheus Malesela (Operations Management)
Makgamathe, Omphemetse Masego (Operations Management)
Makgoga, Sharon Katlego (Engineering: Chemical)
Makwelo, Thabo Collen (Engineering: Chemical)
Malatsi, Noko Samuel (Engineering: Chemical)
Malwane, Boleng (Building)
Mametja, Tumelo (Building)
Manamela, Lesetja Dennis (Operations Management)
Manamela, Steve (Town and Regional Planning)
Maseko, Mcolisi Lucky (Operations Management)
Maseko, Sithembiso (Town and Regional Planning)
Masemeni, Tirisho Llenga (Building)
Masikhwa, Tshifhiwa David (Building)
Maswanganye, Precious Sasi (Mineral Surveying)

Mauda, Emmanuel (Town and Regional Planning)
Mbayela, Nomathamsanqa (Building)
Mbonambi, Nompumelelo (Building)
Miya, Teboho Tamia (Management Services)
Mkhontwani, Nonkululeko Sanah (Building)
Modingoane, Golethabo (Building)
Mogami, Kgomotso Patrick (Building)
Moitse, Katlego Clautilda (Building)
Molelekwa, Jacky Thabiso (Operations Management)
Mpe, Lethamaga Johannes (Engineering: Chemical)
Mthimkhulu, Thembene Innocentia (Building)
Mthimunye, Thulani Innocent Ntokozo (Building)
Mubulayi, Thierry Kalala (Operations Management)
Mukhabele, Andzile Thane (Management Services)
Mukununde, Muano (Engineering: Chemical)
Ndlovu, Bonolo Nokulunga (Town and Regional Planning)
Nhlapo, Nompumelelo (Building)
Nkosi, Gabisile Miriam (Operations Management)
Nkupiso, Siyamthanda (Management Services)
Nyalungu, D (Operations Management)
Nyenga, Kasongo (Building)
Pule, Pinky Silatsatsi Shiela (Operations Management)
Ragatsi, Tsholofelo (Operations Management)
Rakolota, Edwin Maokeng (Engineering: Chemical)
Ramasala, Ramathabatha Dominigue (Operations Management)
Sebola, Kgotsofatso (Engineering: Chemical)
Seedat, Bilaal (Building)
Sentle, Lesego Marcus (Management Services)
Serothwane, Boitumelo Thandokazi Cassandra (Operations Management)
Shabangu, Thulani Oupa (Management Services)
Shirinda, Wealthy Tlangelani (Building)
Shozi, Fortunate Ndumiso (Mineral Surveying)
Sikonela, Nolwazi Khethiwe Thulisile (Building)
Sithole, Njabulo Clive (Town and Regional Planning)
Sithole, Xitshembiso (Building)
Tambwe, John Rachidi (Operations Management)
Tambwe, Ruddy-Samuel (Operations Management)
Thabethe, Sibahle Neliswa (Building)
Tshitereke, Muofhe (Building)
Tshivhandekano, Selby Nkwata (Building)
Vilakazi, Phumzile Sister (Operations Management)

2. Baccalaureus Technologiae (BTech)

Bafetane, Obakeng (Management Services)
Booi, Khesani Kathy (Engineering: Chemical)

Dube, Khulani Thulasizwe (Town and Regional Planning)
Kgame, Malebogo Moses (Quality)
Kgatl, Batlile Sharlien (Management Services)
Khoza, Gloria Hombakazi (Mineral Resource Management)
Magongoa, Confidence Mochakgane (Mineral Resource Management)
Makasi, Nqulelwa (Operations Management)
Mambu, Herve Ted Mbembi (Operations Management)
Maseko, Ntando (Operations Management)
Masha, Mamakau Can (Mineral Resource Management)
Mathosi, Nonhlanhla Memory (Operations Management)
Matiwane, Nomabhucwa Priscilla (Operations Management)
Matladi, Maria Elizabeth (Town and Regional Planning)
Mbanjwa, Siphamandla Innocent (Mineral Resource Management)
Mbaya, Katende Mbaaz Gloria (Operations Management)
Mbhele, Themba Jeremia (Management Services)
Mkhosana, Buhle (Management Services)
Mohlahlo, Tumelo Glen (Mineral Resource Management)
Mohohlo, Boitumelo Dorcas (Engineering: Chemical)
Mokushane, Thebe (Management Services)
Msimanga, Palesa (Quality)
Msimango, Sizwe (Quality)
Mthembu, Ricky (Engineering: Chemical)
Ndebe, Tembile Frank (Mineral Resource Management)
Netshokotshoko, Thambulo Silence (Engineering: Chemical)
Ngoy, Bonkasa Raissa (Quantity Surveying)
Ngqongwa, Khwezi (Town and Regional Planning)
Ngqulana, Songezo (Town and Regional Planning)
Ntseke, Kamvelihle (Operations Management)
Nukeri, Sandy (Mineral Resource Management)
Nyaka, Ayanda Lloyd (Town and Regional Planning)
Pholo, Diketso Banna Essau (Operations Management)
Pule, Peace Pule (Mineral Resource Management)
Radebe, Winny Nomangesi (Mineral Resource Management)
Ramaisa, Kutlo Obidience (Operations Management)
Ramanyimi, Otendelwa Winnie (Mineral Resource Management)
Ramawela, Rethabile Maleshoane Mathilda (Management Services)
Ramazani, Abasi (Operations Management)
Risimati, Pretty Xichavo (Quality)
Sibiya, Ceasar Sibusiso (Town and Regional Planning)
Sibiya, Mpho Innocentia (Town and Regional Planning)
Sifunda, Lindiwe Patience (Quality)
Simelane, Mduduzi (Management Services)
Siphungu, Lihle Maxwell (Quality)
Thulo, Moeketsi Lloyd (Mineral Resource Management)
Vumase, Jailabi Margaret (Operations Management)

3. **Magister Technologiae (MTech)**

Iloh, Patrick Ifeanyichukwu (Engineering: Civil) **(with distinction)**

Dissertation: The Effect of Waste Foundry Sand on concrete properties

Supervisor: Prof GC Fanourakis

Co-Supervisor: Mr A Ogra

Ilunga Mutombo, David (Extraction Metallurgy)

Dissertation: An investigation on the parameters affecting smelting process of a Cassiterite bearing Niobium and Tantalum ore

Supervisor: Prof W Nheta

Co-Supervisor: Mr MK Kalenga

Makhetha, Mamakhetha Eveline (Engineering: Electrical)

Dissertation: Effect of rotor bar shape and stator slot opening on a three-phase induction motor with broken bars

Supervisor: Dr M Muteba

Co-Supervisor: Prof DV Nicolae

Maluleke, Pfumelani Glan (Construction Management)

Dissertation: Causes and effect of construction variation order in Polokwane

Supervisor: Prof DW Thwala

Co-Supervisor: Prof CO Aigbavboa

Mcduling, Chris (Engineering: Mechanical)

Dissertation: The effect of surface finish on fatigue life of aluminium alloy during uniaxial fatigue loading

Supervisor: Prof AL Nel

Co-Supervisor: Dr FFP Pieterse

Mubishi, Clayton Anesu (Chemical Engineering)

Dissertation: Pressure field study of nanofluids using stereoscopic particle image velocimetry techniques

Supervisor: Prof PA Olubambi

Co-Supervisor: Prof N Ahmed

Muchavi, Noluntu Skhumbuzo (Engineering: Metallurgy)

Dissertation: Effect of thermal processing of blended and roll compacted Ti6Al4V sheets on microstructure and properties

Supervisor: Prof EM Makhatha

Co-Supervisor: Dr S Chikosha

Mukwakungu, Sambil (Operations Management)

Dissertation: Implementation of Lean Thinking in a South African short-term insurance company

Supervisor: Dr N Sukdeo

Ramafalo, Rotondwa Benevolence (Construction Management)

Dissertation: Servitisation in South African Construction Industry: Drivers, challenges and opportunities

Supervisor: Dr B Awuzie

Co-Supervisor: Prof CO Aigbavboa

Risimati, Brightnes (Operations Management)

Dissertation: The extent of spatial integration of urban public transport systems in the City of Johannesburg

Supervisor: Prof T Gumbo

Co-Supervisor: Ms K Mushavhanamadi

Safo Kantanka, Osei Yaw (Construction Management) (with distinction)

Dissertation: Critical success factors for the delivery of educational buildings in Ghana

Supervisor: Prof CO Aigbavboa

Co-Supervisor: Prof WD Thwala

Swana, Elsie Fezeka (Engineering: Electrical) (with distinction)

Dissertation: Condition monitoring on wound-rotor induction generator using an intelligent probabilistic system

Supervisor: Dr W Doorsamy

Tembwa, Nzita (Engineering: Metallurgy)

Dissertation: Softening response of as-normalized and cryogenic-soaked P91 martensitic steels

Supervisor: Dr K Katuku

Xaba-Jama, Nondumiso Sihle (Operations Management)

Dissertation: The integration of Quality Management systems into strategic business plan: Eskom case study

Supervisor: Prof P Kholopane

Co-Supervisor: Mr N Madonsela

4. Master of Sustainable Urban Planning and Development

Letlape, Bonolo Helen (Sustainable Urban Planning and Development) (with distinction)

Minor Dissertation: Unpacking the concept of urban resilience in the face of urban change: The case of Maboneng Precinct

Supervisor: Prof T Gumbo

Co-Supervisor: Mr EM Makoni

5. Magister Ingenieriae (MIng) - Master of Engineering (MEng)

Adefemi, Kuburat Oyeranti (Electrical and Electronic Engineering)

Dissertation: An empirical comparison of machine learning techniques for handwritten character recognition system

Supervisor: Dr E Hurwitz

Ajayi, Oluwafemi Peace (Electrical and Electronic Engineering) **(with distinction)**

Dissertation: Direct Current optimal power flow: a comparative study of classical optimisation methods and metaheuristic solution algorithms

Supervisor: Prof N Nwulu

Co-Supervisor: Mr U Damisa

De Villiers, Adriaan Johan (Mechanical Engineering)

Dissertation: Lung health characterization using One-Class classification of dense textures in chest radiographs

Supervisor: Prof Nel

Co-Supervisor: Dr Y Roodt

Erasmus, Pieter (Electrical and Electronic Engineering)

Dissertation: VFFD: Voting features for face detection

Supervisor: Prof AL Nel

Co-Supervisor: Dr Y Roodt

Gaula, Mabatho Cecilia (Engineering Management)

Minor Dissertation: Harvesting mining engineering graduate's potential for value added to the organisation

Supervisor: Prof JHC Pretorius

Co-Supervisor: Prof AF Mulaba-Bafubiandi

Khan, Muhammed Hussain (Engineering Management) **(with distinction)**

Minor Dissertation: Determining the cost of quality in transmission line construction projects

Supervisor: Dr H Nel

Kishore, Nishaan (Engineering Management)

Minor Dissertation: The roles of functional managers and project managers in a matrix organisation

Supervisor: Prof JHC Pretorius

Co-Supervisor: Dr G Chattopadhaya

Kwadi, Collins Kilian (Engineering Management)

Minor Dissertation: The effect of opinion expression from stakeholders on the e-toll project

Supervisor: Prof J Meyer

Maphumulo, Sinothi Duncan (Engineering Management)

Minor Dissertation: Transfer and commercialization of technologies from universities to small companies in South Africa

Supervisor: Dr H Nel

Mngomezulu, Precious Zinhle (Electrical and Electronic Engineering)

Dissertation: Performance analysis of low-energy bluetooth and near-field communication technologies in the financial sector

Supervisor: Prof K Ouahada

Co-Supervisor: Dr S Rimer

Monga, Mweemba Hakalaki (Engineering Management)

Minor Dissertation: Factors affecting the successful completion of projects

Supervisor: Dr H Kandra

Co-Supervisor: Prof JHC Pretorius/ Dr T Choudhury

Nhlengetwa, Linda Kutlwano (Engineering Management)

Minor Dissertation: Application of customer relationship management principles in a sales-oriented engineering organisation

Supervisor: Dr H Nel

Co-Supervisor: Mr B Makhanya

Nkuta, Mhlonipheni Floyd (Engineering Management)

Minor Dissertation: Factors affecting the retention of knowledge workers: A case study in a utility engineering department

Supervisor: Prof AL Marnewick

Ntwagae, Kegomoditsiwe Freda (Engineering Management)

Minor Dissertation: A review of best practices for enterprise enablement

Supervisor: Prof A Telukdarie

Ogbonna, Okwudili Simeon (Mechanical Engineering)

Dissertation: Experimental investigation of mechanical properties of reinforced composite using titanium alloy powder

Supervisor: Dr SA Akinlabi

Co-Supervisor: Dr N Madushela

Samakande, Tendai (Electrical and Electronic Engineering) **(with distinction)**

Dissertation: The effect of coupling circuits in power line communications on impulsive noise

Supervisor: Prof HC Ferreira

Co-Supervisor: Prof T Shongwe / Dr AS de Beer

Van der Ryst, Gerhardus Jacobus (Engineering Management)

Minor Dissertation: The impact of management and organisational structures on project management

Supervisor: Prof JHC Pretorius

6. Magister Philosophiae (MPhil)

Bopape, Thulare Kgaugelo (Engineering Management)

Minor Dissertation: Factors that can improve the reliability of the traction motor for locomotives

Supervisor: Prof JHC Pretorius

Co-Supervisor: Dr G Chattopadhyay

Dibakwane, Lorato (Engineering Management)

Minor Dissertation: Experiences and challenges of project management units: A case study

Supervisor: Prof A Telukdarie

Ilemobade, Ozofu Olabisi (Engineering Management)

Minor Dissertation: Determining the potential benefits of engineering mentoring programs of graduates

Co-Supervisor: Dr A Vermeulen

Co-Supervisor: Prof AL Marnewick

Labana, Beltran (Engineering Management)

Minor Dissertation: Uses of alternatives fuels as best practices to reduce CO2 emissions from the South African cement Industry

Supervisor: Prof A Telukdarie

Co-Supervisor: Ms. M Munsamy

Legoabe, Kgaphamadi Archibald (Engineering Management)

Minor Dissertation: An investigation into human error as the root cause of major incidents occurring within the offshore oil and gas industry

Supervisor: Prof A Telukdarie

Mafokosi, Katleho Roland Mckenzie (Engineering Management) **(with distinction)**

Minor Dissertation: The causes of project failure in railway infrastructure projects

Supervisor: Prof AL Marnewick

Co-Supervisor: Mr B Makhanya

Magada, Tshilidzi Oscar (Engineering Management) **(with distinction)**

Minor Dissertation: The identification of common leadership competencies for engineering managers

Supervisor: Prof AL Marnewick

Co-Supervisor: Mr M Malatji

Magaga, Sihle (Engineering Management)

Minor Dissertation: Infrastructure asset management practices on information management

Supervisor: Dr L Erasmus

Co-Supervisor: Prof JHC Pretorius

Maimela, Patrick Moeketsi (Engineering Management)

Minor Dissertation: Overall equipment effectiveness optimisation for a reserve constrained underground coal mine in South Africa

Supervisor: Prof A Telukdarie

Maleho, Masego Sharon (Engineering Management)

Minor Dissertation: Developing a framework for evaluation of a digital maintenance management system

Supervisor: Prof A Telukdarie

Mamabolo, Mpolayeng Solomon (Engineering Management)

Minor Dissertation: Fibre optic networks: cost factor comparison for broadband access in South African rural areas

Supervisor: Prof AL Marnewick

Co-Supervisor: Prof S von Solms

Manenzhe, Mpho Trinity (Engineering Management)

Minor Dissertation: Maintenance strategy optimisation for load haul dumpers operating at an underground mine

Supervisor: Prof A Telukdarie

Maphanga, Penny Maria (Engineering Management)

Minor Dissertation: Stakeholder identification in the capital project life-cycle for a state-owned enterprise

Supervisor: Dr H Nel

Masigo, Lebogang Elizabeth (Engineering Management)

Minor Dissertation: Design rework in bulk water distribution capital projects: An assessment of a structured design process

Supervisor: Prof AL Marnewick

Matsapola, Selaelo Desmond (Engineering Management)

Minor Dissertation: An investigation into the effectiveness of condition-based maintenance for rolling stock vehicles in South Africa

Supervisor: Dr A Maneschijn

Mendu, Bongumsa Welcome (Electrical and Electronic Engineering) **(with distinction)**

Dissertation: Statistical techniques-based analysis of historical data from sub transmission transformers forced outages

Supervisor: Dr NE Mbuli

Co-Supervisor: Prof JHC Pretorius

Molepo, Pheladi Morufa (Engineering Management)

Minor Dissertation: Complexity factors affecting the duration of research and development projects

Supervisor: Prof AL Marnewick

Co-Supervisor: Mr N Joseph

Mosamane, Simisi William (Engineering Management)

Minor Dissertation: Project management maturity in the South African railway industry

Supervisor: Prof A Maneschijn

Motlathledi, Itumeleng Gladwell (Engineering Management)

Minor Dissertation: Investigation of project delay in construction projects in the South African rail industry

Supervisor: Dr H Nel

Mthembu, Thulani Ernest (Engineering Management)

Minor Dissertation: Evaluating the implementation of prequalification of civil engineering

Supervisor: Prof A Telukdarie

Co-Supervisor: Dr J Agumba

Nenzhelele, Arinao Patience (Engineering Management)

Minor Dissertation: Factors affecting capital investment project benefits realisation in African railway company

Supervisor: Prof A Telukdarie

Ngobeni, Princess (Engineering Management)

Minor Dissertation: Factors that influence project cost estimate accuracy at an engineering broadcasting company

Supervisor: Prof A Marnewick

Nzama, Siphon Ntokozo (Engineering Management)

Minor Dissertation: Digitalisation for optimisation of railway interlocking tests

Supervisor: Prof A Telukdarie

Ramadolela, Ndinanyi (Engineering Management)

Minor Dissertation: Understanding boiler tube leaks and life cycle management in the coal fired power generation industry

Supervisor: Prof A Telukdarie

Co-Supervisor: Prof JHC Pretorius

Rambau, Lutendo Donald (Engineering Management)

Minor Dissertation: The risks associated with wastewater reuse

Supervisor: Prof AL Marnewick

Ramutla, Khutso Ephriam (Engineering Management)

Minor Dissertation: Identification of the termination factors for electrical infrastructure projects: A case study of higher education institution.

Supervisor: Prof J Meyer

Sikhakhane, Siyabonga Thulasizwe (Electrical and Electronic Engineering)
Dissertation: Statistical analysis of frequency and duration of forced outage for sub transmission circuit breakers
Supervisor: Dr NE Mbuli
Co-Supervisor: Prof JHC Pretorius

Sinxoto, Qawekazi (Engineering Management)
Minor Dissertation: Sustainability of lean manufacturing principals in a production system
Supervisor: Prof A Telukdarie

7. Doctor Ingeneriae (DIng)

Pinifolo, Jonathan Benson (Electrical and Electronic Engineering)
Thesis: Design of a spectrum re-use system, A case study for television white spaces in Malawi
Supervisor: Prof BS Paul
Co-Supervisor: Dr S Rimer

8. Doctor Philosophiae (DPhil)

Langa, Hendrick Musawenkosi (Electrical and Electronic Engineering)
Thesis: Modeling student success or failure in Electrical Engineering at the Vaal University of Technology using machine learning techniques
Supervisor: Prof B Twala

Mhlongo, Sphamandla Mlungisi (Engineering Management)
Thesis: Integrated water supply management in water stresses mining regions
Supervisor: Prof AL Marnewick
Co-Supervisor: Prof P Mativenga

9. Philisophiae Doctor (PhD)

Essiet, Ima Okon (Electrical and Electronic Engineering)
Thesis: Improved evolutionary optimisation algorithms with applications to smart grid demand response management
Supervisor: Prof Y Sun
Co-Supervisor: Prof Z Wang

Falodun, Oluwasegun Eso (Metallurgical Engineering)
Thesis: Spark plasma sintering of nanoceramics dispersion strengthened titanium aluminium vanadium alloy
Supervisor: Prof PA Olubambi
Co-Supervisor: Dr BA Obadele

Mulongo, Ndala Yves (Operations Management)

Thesis: An integrated sustainability assessment framework for power generation plants

Supervisor: Prof PA Kholopane

Co-Supervisor: Prof CO Aigbavboa

Oke, Samuel Ranti (Metallurgical Engineering)

Thesis: Spark plasma sintering of duplex stainless steel reinforced with titanium based nanoceramics

Supervisor: Prof PA Olubambi

Co-Supervisor: Dr OO Ige

10. Philosophiae Doctor *honoris causa* (PhD *hc*)

Clay, Phillip Leroy



Pinifolo, Jonathan Benson (DIng)

Jonathan Benson Pinifolo obtained a Master of Science degree in Wireless Communication Systems with distinction from Oxford Brookes University, United Kingdom. He is a registered member of the Institute of Electrical and Electronics Engineering (IEEE). Jonathan is an experienced telecommunication executive who has been involved in the management of various telecommunication projects, appraisals and setting up of operational and functional departments for almost 20 years. He is currently employed by Telekom Networks Malawi as Head of Radio Access Network.

His doctoral research focused on the problem of bridging the digital divide in the developing economies by designing a spectrum re-use system using Television White Space (TVWS) technology. In this research, he designed two low-cost Ultra High Frequency (UHF) TV White Space antennas, namely helical and Z-shaped. In respect of the helical antenna, it has been designed with a high efficiency and a corresponding total gain of 13.09dBi at the resonant frequency of 545 MHz. Furthermore, the designed antenna has a relatively broad bandwidth of 60MHz (510MHz to 570MHz) over the UHF band. This research helps to create a sustainable approach in installation, commissioning and operation of low-cost data networks in rural areas.

Supervisor: Prof BS Paul

Co-Supervisor: Dr S Rimer



Langa, Hendrick Musawenkosi (DPhil)

Hendrick Musawenkosi Langa holds a BSc Computer Science and Information Systems degree from the University of South Africa, a BTech in Electrical Engineering from VUT and an MPhil degree in Electrical and Electronic Engineering Science from the University of Johannesburg. He currently works as an academic at the Vaal University of Technology.

In his thesis, the candidate proposes a model that can be used to predict student success or failure in Electrical Engineering in higher education. The Academic Environment Model (AEM) developed by the thesis consists of three components, namely the student, the lecturer, and the module or subject. In this study, various machine learning algorithms were investigated in order to select the most appropriate ones applicable for the model. The thesis contributes a compact model that can help the higher education sector in making decisions about the success and failure probabilities of students. This is a tool that can assist in guiding students, lecturers and other stakeholders regarding career choices and teaching approaches as well as making decisions on funding.

Supervisor: Prof B Twala



Mhlongo, Sphamandla Mlungisi (DPhil)

Sphamandla Mlungisi Mhlongo has been a manager of Water and Sanitation at the Emalahleni Local Municipality since 2015. His professional experience covers water engineering, urban design and transportation engineering. Prior to starting his doctorate at the University of Johannesburg, Sphamandla had graduated with a Master of Technology at Tshwane University of Technology in 2014, a Bachelor of Technology from Vaal University of Technology in 2010 and a national diploma in Civil Engineering from Mangosuthu University of Technology in 2006. He is a registered professional Civil Engineering Technologist.

Sphamandla doctoral research focused on water supply management in water stressed mining regions. It examined mineral related environmental impacts on the municipal water provision value chain. The research contribution to the body of knowledge was a robust approach to proactively monitor water quality determinants and to make effective use of existing water quality data and assess the water quality risks. This enabled extracting essential information to avoid violating water pH and mineral thresholds in the future and to aid advance action. His research thus constituted an addition to knowledge and showed evidence of originality and independent critical judgement. The doctorate made contributions to United Nations Sustainable Development Goal 6 on clean water and sanitation, and it has also opened up new avenues for research and partnerships for the goals.

Supervisor: Prof AL Marnewick

Co-Supervisor: Prof P Mativenga



Essiet, Ima Okon (PhD)

Ima Okon Essiet obtained the Bachelor of Engineering (BEng) and Master of Engineering (MEng) degrees from Bayero University in Nigeria in 2005 and 2011, respectively. He enrolled for doctoral research at the University of Johannesburg in 2017. His research interests include Neural Networks, Evolutionary Optimization Algorithms and Smart Grids. The motivation of his research is to realise the core concepts of the Fourth Industrial Revolution (4IR) for smart power grids. He published three ISI master indexed journal articles and four peer-reviewed conference papers during his two-year PhD study.

The candidate's research focused on the improvement of evolutionary algorithms and their applications to the demand response models in smart grids. The challenge of balancing convergence and diversity for Pareto-based evolutionary algorithms has remained a hindrance to the optimal performance of these algorithms. His research proposed improved 'niching' techniques for genetic algorithms and differential evolution. These improved techniques were then applied to optimise the smart grid demand side management. The results of his research showed that the improved algorithms outperform several existing, well-known evolutionary algorithms.

Supervisor: Prof Y Sun

Co-supervisor: Prof Z Wang



Falodun, Oluwasegun Eso (PhD)

Oluwasegun Falodun obtained his BEng and MEng in Metallurgical and Materials Engineering from the Federal University of Technology, Akure, Nigeria, in 2010 and 2015, respectively. He registered for his doctoral studies at the Department of Engineering Metallurgy, University of Johannesburg, in 2017. He received the Global Excellence and Stature (GES) scholarship for his doctoral programme. The candidate has published six articles in international accredited journals and three peer-reviewed conference papers from his doctoral research thesis.

The candidate's doctorate research focused on developing a unique technique for fabricating highly innovative titanium nitride nanoparticle dispersion strengthened titanium matrix composites (TMCs). The research investigated the mechanism of the nanodispersion strengthening and fabrication technique using innovative spark plasma sintering technology. The influence of ceramic nanoparticle addition and dispersion techniques on consolidation behaviour of the composite, microstructural interactions and phase transformation phenomena, and their mechanical properties were assessed using a combination of characterisation techniques. The study established that uniformly dispersed titanium nitride nanoparticles within the matrixes of titanium-based alloy significantly improved structural characteristics of the alloys and enhanced the mechanical and tribological properties of the composites. Therefore, fabrication of titanium matrix composites using the technique developed through this study could be valuable for designing components for a variety of engineering applications that require higher strength as well as improved corrosion and wear resistance properties.

Supervisor: Prof PA Olubambi

Co-Supervisor: Dr BA Obadele



Mulongo, Ndala Yves (PhD)

Ndala Yves Mulongo obtained his Bachelor of Engineering in Extraction Metallurgy from the Faculty of Polytechnic, University of Lubumbashi, Democratic Republic of Congo, in 2012, and his Master's in Engineering Management (with distinction) from the Postgraduate School of Engineering Management, University of Johannesburg, in 2016, where he is also working as a lecturer of Operations Management and supervisor of master's students in the Department of Quality and Operations Management. He has published several peer-reviewed conference and journal papers. He enrolled for his doctoral studies with the University of Johannesburg in 2017.

The contribution of the study is the development of a new, holistically integrated sustainability assessment framework for power generation plants in South Africa. The framework was developed, based on existing literature comprising 19 impact categories, 52 potential indicators, and 10 end-points, including environmental, economic, and social aspects of various electricity generating sources. The study also developed three novel models noting the cradle to gate environmental assessment model; a new and comprehensive levelised cost of electricity model aimed at evaluating the cost performance of different power producing technologies; and an integrated analytical model to measure the potential of direct jobs, which could be generated throughout the different stages of electricity generating plants' life cycle. The study demonstrated that renewable energy sources were the most sustainable and promising alternative to the current electricity supply system.

Supervisor: Prof P Kholopane

Co-Supervisor: Prof C Aigbavboa



Oke, Samuel Ranti (PhD)

Samuel Ranti Oke studied at the Federal University of Science and Technology, Akure, Nigeria, and obtained his Bachelor's and Master's degrees in Metallurgical and Materials Engineering in 2010 and 2014, respectively. He served as a research assistant and later secured a lecturing position at the same university. He received both the National Research Foundation (NRF) and Global Excellence and Stature (GES) scholarship awards for his PhD. Samuel registered for a PhD degree programme in Engineering Metallurgy at the University of Johannesburg in 2017. The candidate has published six articles in ISI/Scopus-indexed journals and four peer-reviewed conference papers.

The candidate's doctoral research study focused on the development of nitride dispersion strengthened duplex stainless-steel, using spark plasma sintering (SPS) technique. The concept was aimed to resolve the application limitation encountered by duplex stainless steels in abrasive environments. Advanced characterisation techniques were used to gain insight into the densification mechanisms, phase evolution and transformation, interfacial interactions, grain boundary character, elastic-plastic deformation behaviour and wear of the spark plasma sintered duplex stainless steel. The study established the basis for the selection of optimal sintering process parameters for the fabrication of the TiN nanoparticle dispersion strengthened duplex stainless steel. The developed duplex stainless steel possesses high hardness, elastic modulus in addition to excellent resistance to wear and plastic deformation. The newly developed steel is recommended for engineering applications where enhanced mechanical and wear properties are desired.

Supervisor: Prof PA Olubambi

Co-Supervisor: Dr OO Ige



Clay, Phillip Leroy (PhD *hc*)

Professor Phillip Leroy Clay was born on 17 May 1946, grew up in Wilmington, North Carolina, United States. Professor Clay is a 1964 graduate of Williston High School and received his Bachelor's degree in History and Urban Studies with honours from the University of North Carolina at Chapel Hill in 1968. After graduating from university, Phillip Clay enrolled in the Massachusetts Institute of Technology (MIT) where he earned his PhD degree in City Planning in 1975.

Professor Phillip Clay joined the MIT faculty in 1976 and held various leadership positions at MIT until 2011. Upon graduating from MIT, he was appointed immediately as Assistant Professor in MIT's Department of Urban Studies and Planning (DUSP). He rose through the ranks, first becoming Associate Professor and then becoming Full Professor in 1992. Professor Clay also served as the Assistant Director of the Joint Centre for Urban Studies of MIT and Harvard University from 1980-1984 and as Head of DUSP from 1992-1994, and served as Associate Provost from 1994 until being appointed as Chancellor in 2001. He became the highest-ranking African American official in the Institute's 156-year history. He served as the Chancellor of MIT from 2001 until 2011. As Chancellor, Clay had oversight responsibility for enhancement and integration of undergraduate and graduate education, student life and campus community services, research policy, strategic planning, campus development, major educational and international institutional partnerships, and large-scale industrial partnerships. Besides this, Professor Clay handled the primary responsibility and overview of faculty affairs, quality of faculty life issues, dispute resolution and broad policy oversight. In 2016, Professor Clay was named advisor to the Dean of the School of Architecture and Planning. Presently in DUSP, he serves as Professor Emeritus where he teaches courses in Housing Policy and Poverty, Thesis Preparations and heads the Housing, Community and Economic Development Group.

During his undergraduate years, Professor Clay founded and directed Carolina Talent Search, a student organisation whose mission was to identify prospective students and encourage them to apply to Carolina, in recognition that "equal opportunity" is not equal until everyone has equal access to, and knowledge of, the opportunity. Professor Clay was also active in the Toronto Exchange Commission and the Carolina Forum and was inducted into the Order of the Grail. Under Professor Clay's leadership, MIT saw the number of applications for undergraduate admission double and also attracted students of increasing quality, diversity and breadth of achievement. The Institute advanced the educational commons through increased opportunities for global education, communications, project- and service-based activities, and through support for innovative courses across the curriculum under Professor Clay's leadership.

Professor Clay was a driving force behind the Campaign for Students. Professor Clay has helped raise more than \$500 million to support future generations of MIT students. Together with other senior officers, Professor Clay helped lead MIT's management of the global financial crisis through a budget-reduction process designed to balance the general institute budget, while preserving MIT's core strengths during a significant pressure on MIT's endowment. Clay also played an important part in the development of MIT's international initiatives and global education programs, including the Cambridge-MIT exchange and the MIT-Portugal Program.

Professor Clay is widely known for his work in US housing policy and community-based urban development and has been involved in several studies that received national attention. In one of the studies commissioned by the Neighborhood Reinvestment Corporation in 1987, he identified the market and institutional conditions contributing to the erosion of low-income rental housing and documented the need for a national preservation policy. He later served on the national commission that recommended the policy that became part of the Housing Act of 1990. Professor Clay has engaged in several studies that helped the national agenda for urban policies. He is author of one of the first studies to document the process of urban gentrification. His work on gentrification and neighborhood upgrading was among the first to explain that all neighborhood change is not associated with the degradation of place and social life. His urban policy work has focused on housing and related strategies that public-sector and other organisations can employ to revitalise communities. Among other works, his publications include two books, *Neighborhood Renewal: Middleclass Resettlement and Incumbent Upgrading in American Neighborhoods*, and *Neighborhood Politics and Planning* (with Rob Hollister).

Professor Clay is a founding member of the National Housing Trust, which addresses the issue of housing preservation. He is the Chair of the board of the Community Builders Inc., one of the nation's largest non-profit developers of affordable housing in the USA. He is a member of several foundations and non-profit boards, including the Kresge Foundation and the Mastercard Foundation. Professor Clay also has experience in public higher education as a member of the board of the University of North Carolina. He is a member of the board of the Aga Khan University. In recent years, he has served as a Senior Advisor on projects in several areas that include public housing, community capacity building and urban job initiatives. He served as Chairperson of the board of Roxbury Community College from 2002 to 2006, and has served as a consultant to Federal and State Agencies and Foundations. His other community and professional activities include serving on the board of the Housing Research Foundation, the Association of Collegiate Schools of Planning, the Alliance to End Childhood Lead Poisoning, the Emma Hunt Trust and the Massachusetts Horticultural Society.

His current interests include organisational capacity in community-based non-profits as well as the role of anchor institutions. Based on his work on MIT international strategies, he is also interested in the increasing role higher education can play in national development planning in less developed and merging nations. His work now focuses on higher education in Africa.





Special Awards



Faculty of Engineering and the Built Environment

Faculty Prize for the Most Prestigious Undergraduate Student (ECSA Medal)

Mafa, Ike Maunatlala (with distinction)

Baccalaureus Ingenieriae (BIng): Electrical and Electronic



S²A³ Medal for Original Research at Master's level for 2018

Gharehbaghi, Rezvan (with distinction)

Master of Engineering (MEng): Mechanical Engineering



Chancellor's Medal for the Most Meritorious Master's Study for 2018

Dithebe, Khotso (with distinction)

Magister Technologiae (MTech): Construction Management



See the back cover for the words of the National Anthem.



A word of thanks to the UJ Alumni Association for sponsoring the flower arrangements at the University of Johannesburg graduation ceremonies.

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