

# Lindokuhle (Karabo) Thandolwakhe

## Dhlamini | Mechanical Engineering

### General Information

Citizenship: South African

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### Education

#### University of Pretoria (2020 – 2021)

*Bachelor of Engineering Honors (BEngHons), Mechanical Engineering*

- Research: An investigation into the influence of clearances in model steam engine components and the measurement sensitivity associated with using proximity sensors on zebra taped crankshafts.
  - Developed a signal processing algorithm deducing the magnitude of friction occurring between the engine piston and cylinder-sleeve.
  - Designed and assessed CAD ghost mechanism's ability to expose the frictional energy loss contributions from finite element relationships in mechanical systems exhibiting general planar motion.

#### University of Pretoria (2015-2020)

*Bachelor of Engineering (BEng), Mechanical Engineering*

- Design: Chain and sprocket nuclear reactor control rod drive mechanism
  - System conception, design, and development of a control rod mechanism with interchangeable operating conditions and shutdown conditions, the latter facilitating a swift free-falling response to reduce sudden critical energy levels.

## Curriculum Vitae

### Penryn College (2011 – 2014)

#### *National Senior Certificate (IEB)*

- Information Technology Delphi Project: A courier service and database management computer program catering to retail transactions to improve business decision-making.

## Curriculum Vitae

### Technical Skills

- Engineering Simulations (ANSYS & SolidWorks)
- CNC Workshop (Milling, Drilling & Grinding)
- MIG Welding & Arc Welding
- Lean Six-Sigma/Lean Manufacturing
- Python, Delphi 7 & SQL Programming

### Work Experience

#### Facilities Management Internship (Nov 2020 – Apr 2021)

*Department of Public Works and Infrastructure – Nelspruit, Mpumalanga*

- Supervised the management of the mechanical portfolio of critical facilities.
- Tasks: Estimating, design, acquiring necessary permits, risk analysis, and project engineering of prisons, magistrate courts and military bases.
- Provide project support for engineers as the candidate mechanical engineer
- Outlined state's safety and protection issues pertaining to the structural integrity and performance of physical assets such as the occupants, power generation equipment, petrochemical plant, water utility equipment and mining equipment.
- Working knowledge of A1016/A1016M ASTM standards further improved by Q Techna (a special method and equipment for leak testing welds).
- Disassembled and assembled boiler-room's coal transportation corkscrew to perform and optimize in-house maintenance reliability from conception, installation to junk status. Accounting for various losses in the logistics of facility's maintenance and repairs.

#### Student Executive - Sports (Aug 2019 – Oct 2020)

*University of Pretoria (Faculty of Engineering, Built Environment, and Information Technology) – Pretoria, Gauteng*

- Sports portfolio. (Excellence in Service Award)

## Curriculum Vitae

- Responsible for the direction of the faculty's student union according to a strategic plan.
- Facilitated a socially distant sporting event for 1050 students via Strava GPS data technology.
  - Tour de Backyard & Tour de Backyard Relay Event

### Design and Test Vacation Assistant (Dec 2018 - March 2019)

*Afriski Mountain Resort – Butha-Buthe, Lesotho*

- Hands-on and on-site workshop experience performing ad hoc design requests on zip-line trolley and other system related tests to creatively improve customer experience.
- Performed 3D SolidWorks CAD designs on trolley's brake system components.
- Work on 5-axis CNC milling and turning machines for component fabrications.
- Engineered and outlined testing of the influence of 14km/h winds on zip-line's control
- Working knowledge of the ASTM Standard Practice for Aerial Adventure Courses & Lifting Equipment

### Achievements

- ECSA & Washington Accord candidate engineer registration (March 2021)
- Faculty of Engineering, Built Environment & IT Executive Committee (2019/2020)
- University of Pretoria - Student Development: Excellence in Service Award (2019/2020)

### Volunteering

- Engineers Without Borders – University of Pretoria (2021/22)
  - Providing essential technical knowledge and engineering solutions to the maintenance and supportability of Leeufontein Primary Farm School.

## Curriculum Vitae

- Student Nutrition and Student Progress Program (2019/20)
  - Solidarity Fund for addressing the university's plight for sanitary pad allowances
- Engineering Community Project in Lesotho (2018/19)
  - Administered the development of hammer pump systems for communities located at extremely far distances from natural water sources

## Curriculum Vitae

### Skills

- Fast learner and hungry to develop new technical engineering skills
- Proficient in computational structural and solid mechanics (ANSYS)
- Collaborative leader and great project management skills
- Skilled at building data analytical models to assess business and operational metrics
- Project planning, scheduling, and implementation
- Excellent fracture mechanics background for damage tolerant designs
- Proficient computer-aided drawer (SolidWorks)
- Ability to run computational fluid dynamic simulations to assess design performance
- Confident preventative and corrective maintenance decision maker
- Strong knowledge of plant life-cycle reliability and supportability
- Passionate about supplementing non-destructive evaluation theory
- Excellent customer service skills and clarifying client requirements
- Strong programming language skills for problem solving (Python)
- Strong organizational, analytical, and attention-to-detail skills; ability to handle multiple tasks, prioritize work and manage time effectively

### Languages

- English (Fluent)
- siSwati (Native)
- Afrikaans (Basic)

### Interests

- Dancing (South African Honors)
- Cinematography
- Soccer and Rugby
- Entomology - Beekeeping