

Donors



Faculty of Engineering,
Built Environment and
Information Technology
Fakulteit Ingenieurswese, Bou-omgewing en
Inligtingtegnologie / Lefapha la Boetsenere,
Tikologo ya Kago le Theknoioetsi ya Tshedimošo

Make today matter
www.up.ac.za



Global Transport and Logistics



FOR PROFESSIONALS
SINCE 194



CELEBRATE

2023 INDUSTRIAL ENGINEERING Projects Evening



Department of Industrial and Systems Engineering

9 November 2023

Projects evening
Aula

18:00

Welcome
Mrs Anthea Venter

18:10

Introduction of students
Mr Thabang Ngwenya

18:15

Conducting market and financial feasibility analyses to
inform the facility layout of Jesmondene's real estate
development
Chirag Beekrum

18:30

Identification of the most common errors resulting in a
downtime state within an automated manufacturing cell
Mikaela Erasmus

18:45

Optimising production planning in an injection moulding
environment
Christiaan van de Merwe

19:00

Interval

19:10

Simulating a self-service bag drop system at OR Tambo
International Airport
Suné Jacobs

19:25

Establishing a standardised process model for product
development at an audiometric medical device specialist
company
Byron Meij

19:40

Optimising a pharmaceutical manufacturing process
Nicola Theron

19:55

Awards ceremony
Prof Sarma Yadavalli

20:05

Tribute
Mr Roland Röhrs

20:15

Guests move to the Rautenbach Hall
where refreshments will be served and posters displayed

- Ally AA Donovan** Utilising time-series forecasting and lean manufacturing to improve efficiency and meet seasonal demands at MyFreezy
- Aregbeshola ARB Abdur-Rahman A** A two-fold approach for smallholding farms transitioning to large-scale agriculture to enhance profitability
- Barnard I Ilze** Improving raw material flow in a warehouse using the theory of constraints within the cosmetics industry
- Beekrum C Chirag** Conducting market and financial feasibility analyses to inform the facility layout of Jesmondene's real estate development
- Bezuidenhout A Anika** Facility redesign and inventory management for Build it Mamelodi
- Binedell GS Greg** Alleviating congestion in a high-volume, space-constrained warehouse through the use of a dynamic picking system
- Bouwer JM Jano** Optimising the utilisation of a production sequence in a processing plant
- Brandt A Anél** Improving the outbound logistics of Sinvac
- Burger SA Stefan** Determining the feasibility of mine electrification to minimise carbon emissions through discrete event simulation modelling
- Carolin R Ryan** Utilising facility redesign and 5S to reduce overtime worked
- Carter CE Catherine** Optimisation of logistics operations to reduce overall courier costs across divisions at Optimi
- Anonymous** Predictive analysis and effective management of residential theft drivers in South Africa through the use of systematic modelling
- Chikonde N Namakau** Optimising the safety stock of a beverage factory
- Chuang BW Betty** Optimisation of an air-conditioning distribution center
- Coetzer TE Tane A** A data-driven approach to school online learning decision-support
- Craig JG Jana** Modal selection and transportation optimisation in the mining industry
- Dambha MZ Mahomed** Improving production line performance using lean manufacturing techniques
- De Witt M Miné** Improving performance by designing, testing, and implementing a performance measurement system at WGH Consulting
- De Toit C Charl** Optimising the handling of wood waste in a sawmill production line
- Dube MW Wandile** Implementation of total productive maintenance to improve machine availability and performance at Kusasa Pressure Systems
- Erasmus MK Mikaela** Identification of the most common errors resulting in a downtime state within an automated manufacturing cell
- Essa A Aman** Optimisation and improvement of current inventory management systems
- Gallie SR Storm** Developing an inventory order model for the importation of deteriorating materials
- Giuricich MS Marco** Optimisation of a paint manufacturing production line
- Godana LM Likhanyile** Improvement of the inventory management system for perishable goods at a greengrocer
- Gourley AM Adrian** Investigating methods to minimise raw material over and understocking at an industrial packaging company
- Greyling HC Hendré** Optimisation of raw material sourcing for an agri-food processor
- Hooper JR Joshua** Optimising the process of identifying investment and acquisition opportunities within the USA wastewater treatment market
- Jacobs S Suné** Simulating a self-service bag drop system at OR Tambo International Airport
- Janse van Rensburg T Timon** Efficiency improvements at MAXXLIVING
- Jonga RN Nigel** Improving the recruitment process to foster the development of exceptional human resources at an engineering consultancy firm
- Jonker AV Angélique** Process optimisation for part logistics of a paint shop in the automotive industry
- Anonymous** Analysing and developing a sustainable business model for a start-up company
- Kalla A Azra** Increasing productivity and profitability by improving the flow and utilisation of enterprise resources
- Kalla A Azim** Improving the Overall Equipment Effectiveness (OEE) and production workflow at a cosmetic company
- Kumbula TT Trish** Utilising a data management framework to optimise the corporate Environmental, Social and Governance (ESG) alignment
- Laubscher MD Michiel A** A comprehensive study of the financial and operational effects of building versus renting for BusinessPrint
- Lawrie AI Anya** Infrastructure analysis and feasibility study for soybean drying in South African silos
- Anonymous** Using a nationwide Livestock Identification and Traceability System (LITS) to reduce the spread of Foot and Mouth Disease (FMD) amongst cattle in South Africa
- Lloyd CP Christopher** Optimising packing in a pharmaceutical warehouse
- Maaga NO Nathi** Improving dispensing efficiency through inventory management techniques for a private medical practice
- Mabata T Tsepo** Designing an architectural framework for the development of a synchronised multimodal authentication system with fingerprint, face, and voice recognition
- Mahlajati T Tumisang** Improving data visibility in the inventory processes of an events company
- Mahori N Nhlanhla** Developing a solar energy generation prediction model using machine learning
- Majola M Mbhekeni** Designing an order management system for Studio Delta
- Makuwa VJ Vinjeru A** A metaheuristic approach to a scheduling and vehicle routing problem for a manufacturing company
- Makuwa VJ Vitumbiko** Market analysis of the natural gas industry in South Africa
- Mans CCW Christoph** Utilising standardisation to improve the quality of macadamia nut processing on farms
- Marengo FB Fabio** Assessment of the global water and wastewater treatment market from a venture capitalist perspective
- Mashabane BI Bongwiwe** Identifying the optimal automation technique to improve operational flow in a warehouse system
- Masogo MP Mmasale** Data-driven sales optimisation at Lapologa Liquor Restaurant
- Matshe MAR Mboyana** Developing an inventory management system for the Jwili Laundry Services warehouse
- Meij BC Byron** Establishing a standardised process model for product development at an audiometric medical device specialist company
- Milazi MN Nathi** Optimising an engine dress facility to minimise line stoppages at an automotive company
- Mntanga S Simamkele** Designing supply chain and inventory management systems for Lit Hair
- Mohamed E Ebrahim** Analysing process control at Columbus Stainless
- Mokete MV Vinolia** Facility layout planning for a stock product warehouse
- Monyemona KV Vanessa** Production forecasting for the Wonderfontein Glencore plant
- Mooroogen R Rubeshen** Utilising operations research and facilities planning to redesign the layout of a hardware retail store
- Morgan K Kayla** Optimising warehouse processes of a commercial printing company through implementation of a QR code tracking system
- Mostert PZ Zirk** Reducing the overtime cost of MCR Manufacturing
- Moyo SM Busie** Designing an independent school network using campus clusters based on facility profiles
- Msimango SS Siphokazi** Improving the warehouse layout and inventory management of a local hardware store
- Mtolo AN Ayanda** Utilising mathematical modelling to optimise the production of deli foods in a supermarket
- Naidoo TI Tiasha** Modelling the dynamics of global warming and deterioration of the ozone layer
- Naidoo J Jeshmika** Improving productivity in the expanded metal manufacturing department of Mentis Africa
- Naidoo P Prelija** Optimisation of slotting and replenishment of stock at a fast-moving consumer goods warehouse
- Ncalane TI Thembani** Improving inventory management processes in the fast-food industry
- Ndlovu G Gugulethu** Optimising the demand forecasting and inventory management processes for Nampak
- Ndlovu AN Nandi** Utilising systems modelling and systems thinking to understand the retrogressive impact of dropouts on universities
- Ngwenya IO Innocentia** Using operations research to optimise operations at a cleaning service oriented company
- Nigrini AH Andries** Improving productivity and production throughput at a small textile manufacturer
- Nkwinika E Elnathan** Investigating the ease of traceability of ChatGPT footprints in student assignment submissions
- Oosthuizen E Erik** Designing and enabling a production system for a home manufacturer
- Oosthuizen NM Marco** Improving the operations of the largest trailer production company in Africa
- Pandey S Sagar** Utilising facilities planning for process improvement at a TSE workshop
- Paynter L Lauren** Utilising simulation modelling to analyse and optimise production capacity at Glacier
- Ramakrishnan J Jermi** Optimising inventory management at Resolute
- Reilly T Tristan** Optimising the facilities layout for the production and assembly facilities of a storage management company
- Rolle JR James** Optimising a facility layout and improving inefficiencies for a relocated workshop at Mobile Macs
- Schoeman J Jade** Optimising the outstanding claims register management reserving process for motor claims at an insurance company
- Schoeman MF Maryke** Designing an operations management training framework for an export grape packhouse
- Smit WM Wium** Maximising the volume utilisation of freight trucks by optimising pallet allocation
- Sono TP Thembaletu A** A systems engineering approach for the development of a predictive model to estimate the economic sustainability of a business system
- Spitholt J Jayce** Optimising mining through discrete-event simulation modelling
- Swart DA Dané** Optimising inbound supply chain and logistics for a plastics manufacturing company
- Swebu GC Gcina** Modelling the implications of changing climatic and economic drivers on life expectancy in South Africa
- Talke GM Grethe** Developing solutions for a supply shortage initiated by supplier exit
- Theron N Nicola** Optimising a pharmaceutical manufacturing process
- van Beek HJD Henjo** Optimising an outbound delivery schedule for RBMR
- van de Merwe CHG Christiaan** Optimising production planning in an injection moulding environment
- van der Walt EdV Eric** Optimising inventory management at a grocery store
- van der Westhuizen L Lehanni** Investigating potential customer relationship management software to optimise a customer support department
- van Rooyen C Cailin** Transforming tender pricing with data-driven machine learning solutions in the context of civil engineering
- van Ryneveld L Leo** Operational feasibility analysis of a centralised medical transaction centre using a simulation model
- van Zyl A Anushke** Process mining as an analysis tool for a Procure-to-Pay (P2P) process
- Visser W Walter** Optimising the data capturing system to improve efficiency in a packing process
- Vosloo JH Jacques** Optimisation and waste reduction of the colour sorting department in a macadamia processing plant
- Weidemann JS Jonty** Analysis and optimisation of the staging facility and pickup process of an online fulfilment department at Makro