# Postgraduate Diploma (PGDip) in Industrial Engineering

**Delivered by North-West University.**

*It all starts here®*

*By obtaining this qualification at the North-West University (NWU) you will accelerate your career and improve your effectiveness and efficiency in the classroom.*

## Why NWU?

NWU is a leading educational institution in South Africa and worldwide that offers you:

- **Limitless learning:** With state-of-the-art facilities and leading academics, your education will know no bounds.
- **Community and support:** You'll find a vibrant community and a support system to help you through every challenge and celebrate every victory.
- **A future of opportunities:** Our graduates are sought after, ready to make an impact in their careers from day one.

## Why NWU Distance Learning?

- **Your learning, your way:** At NWU, we understand life doesn't follow a one-size-fits-all schedule. Tailor your learning to your life, allowing you to study when and where it suits you best.
- **Earn while you learn** and build transferable skills through experience.
- **More than academic support:** We don't just care about your results; we care about you. Our dedicated support team is here to guide you through every step, ensuring your academic and personal success.

## *Get familiar with your essential study resources!*

**Student resources:** **https://distance.nwu.ac.za/help** - Access helpful resources and information for administrative queries.

**Student Support:** **https://services.nwu.ac.za/ctl** - Find guidance and assistance to optimise your academic experience.

**Student Counselling and Development:** **https://services.nwu.ac.za/student-counselling-and-development** - Access support services to nurture your personal and academic growth.

## Who is this programme for?

This programme is targeted at individuals who aspire to advance their career or change direction by gaining specialised knowledge and skills in industrial engineering. The programme is also designed for individuals without an appropriate undergraduate qualification in industrial engineering to transition to advanced postgraduate studies in industrial engineering.

Two specialisation variants respectively in sustainability and sustainable mining are designed to equip individuals to execute their technical and managerial responsibilities towards achieving sustainability development goals (SDGs) and can also articulate into advanced postgraduate studies in sustainable engineering.

## Admission requirements

Admission requirements can be found in the official yearbook. In order to qualify for this programme you will need an appropriate bachelors degree or advanced diploma (exit level 7) within disciplines related to engineering.

Recognition of prior learning will also be considered.

## Method of Delivery

Modules in the Postgraduate Diplomas will be presented using distance mode. A learning management system will provide a platform for the modules. Each module will consist of a combination of an interactive site, that will enable students to participate in well-structured self-study learning activities, and live and other interactive sessions.

## Cost and Financial Assistance

All fees are annually adapted. Study fees are based on modules and students pay per module and not for the diploma as a whole: **https://wfp-lb1-rh7.nwu.ac.za/study-fee-cost-estimation/insecure**. Contact pc-studyfees@nwu.ac.za to obtain a quotation.

International Students scan here:

## Each Post Graduate Diploma comprises 10 online modules of 120 notional hours, each spreading over one semester

### PG Diploma in Industrial Engineering (General)

*Programme Code: 7DB D01*
Duration: 2 years

1. **Industrial Thinking & Philophies:** Appreciate what Industrial Engineers do, why they do it and how they bring, create, improve and sustain value.
2. **Introduction to Software Engineering:** Being able to create computer code is a key skill of the Industrial Engineer of the future. This module introduces the student to Software Engineering and forms the basis for other modules in data science, Simulation Modelling and Decision Support Systems.
3. **Business Process Engineering:** BPR is a loosely collected set of philosophies and techniques that can be used to gain efficiency, productivity, profitability and overall business success.
4. **Introduction to Data and Data Science:** Evidence based decisions are better decisions. In the abundance of data and the overwhelming amount of information and opinion, gathering suitable data, learn to process it correctly to build valid evidence.
5. **Operations Excellence:** Improvement philosophies, including Lean, Six Sigma, Systems Thinking, and Theory of Constraints, to guide them through a selection and execution and loops back to human factors for implementation.
6. **Decisions Support Systems:** Students are introduced to the key philosophies, tools, software and approaches to building strong evidentiary chains to make good decisions, and to back these up scientifically.
7. **Modeling & Simulation:** Specific skills in model development, simulation coding and being able to apply these to understand and drive real world problems.
8. **Quality Management:** Specialised skill set in the theoretical and practical tools necessary to manage quality in organisations and across value chains.
9. **Operations Management & Supply Chain:** Deliver product to customer demand in an optimised, efficient, and high-quality way.
10. **Engineering Investigation and Problem Solving:** Students will identify and complete a capstone project that is aimed to deliver an Industrial Engineering solution to a complex, real-world problem.

### PG Dip in Industrial Engineering with Sustainability

*Programme Code: 7DB D02*
Duration: 2 years

1. **Social-Technical Systems Thinking & Philosophies:** Structured ways to manage complexity associated with socio-technical systems, including the language to describe socio-technical systems, methods to analyse these and to measure and map socio-technical systems across space and over time.
2. **Introduction to Software Engineering:** Being able to create computer code is a key skill of the Industrial Engineer of the future. This module introduces the student to Software Engineering and forms the basis for other modules in data science, Simulation Modelling and Decision Support Systems.
3. **Business Process Engineering:** BPR is a loosely collected set of philosophies and techniques that can be used to gain efficiency, productivity, profitability and overall business success.
4. **Introduction to Data and Data Science:** Evidence based decisions are better decisions. In the abundance of data and the overwhelming amount of information and opinion, gathering suitable data, learn to process it correctly to build valid evidence.
5. **Operations Excellence:** Improvement philosophies, including Lean, Six Sigma, Systems Thinking, and Theory of Constraints, to guide them through a selection and execution and loops back to human factors for implementation.
6. **Decisions Support Systems:** Students are introduced to the key philosophies, tools, software and approaches to building strong evidentiary chains to make good decisions, and to back these up scientifically.
7. **Integrated Planning & Scenario Forecasting:** Explore strategy development, and apply statistical approaches to manage the multiple and futuristic aspects to achieve the SDGs.
8. **Introduction to Expanded Design Thinking:** Driving co-created human-centered solutions that are sustainable.
9. **Sustainable Value Chains:** Redefines customer value, based on sustainabilty concepts, then improve and optimise value chains.
10. **Sustainable Design & Wicked Problem Solving:** Students will identify and complete a project that is aimed to achieve an objective that aligns with one of the 17 SDGs.

### PG Dip in Industrial Engineering with Sustainable Mining

*Programme Code: 7DB D03*
Duration: 2 years

1. **Social-Technical Systems Thinking & Philosophies:** Structured ways to manage complexity associated with socio-technical systems, including the language to describe socio-technical systems, methods to analyse these and to measure and map socio-technical systems across space and over time.
2. **Introduction to Software Engineering:** Being able to create computer code is a key skill of the Industrial Engineer of the future. This module introduces the student to Software Engineering and forms the basis for other modules in data science, Simulation Modelling and Decision Support Systems.
3. **Business Process Engineering:** BPR is a loosely collected set of philosophies and techniques that can be used to gain efficiency, productivity, profitability and overall business success.
4. **Introduction to Data and Data Science:** Evidence based decisions are better decisions. In the abundance of data and the overwhelming amount of information and opinion, gathering suitable data, learn to process it correctly to build valid evidence.
5. **Operations Excellence:** Improvement philosophies, including Lean, Six Sigma, Systems Thinking, and Theory of Constraints, to guide them through a selection and execution and loops back to human factors for implementation.
6. **Decisions Support Systems:** Students are introduced to the key philosophies, tools, software and approaches to building strong evidentiary chains to make good decisions, and to back these up scientifically.
7. **Sustainable Mine Planning & Design:** Shifting from singular goals of production, profit and consumption to holistic goals incorporating economic, environmental social concepts.
8. **Sustainable Mining & Production Practices:** Managing production plans, production inputs and production waste to drive sustainability in day-to-day production patterns.
9. **Ecological Resiliance & Rehabilitation:** Principles and approaches (restorative or rehabilitation) for minimising the negative impacts of mining practices.
10. **Sustainable Design & Wicked Problem Solving:** Students will identify and complete a project that is aimed to achieve an objective that aligns with one of the 17 SDGs.

## Contact Information


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