











# INSPIRATIONAL WOMEN

Third edition





One of the most courageous things you can do is identify yourself, know who you are, what you believe in and where you want to go.

Sheila Murray Bethel

# 2

## wela – growing women in the engineering field

The Women in Engineering Leadership Association (WELA) has grown in leaps and bounds since its humble beginning two years ago. We would not have achieved this success without the support of our fellow aspiring engineering and working women and so in this booklet we yet again highlight a few of these inspirational women.

We are also pleased to report that our **WELA** activites have been approved as an official Nelson Mandela Metropolitan University (NMMU) short course and will now be known as the Leadership Development Programme (LDP). The LDP will be made up of a number of student counselling workshops as well as personal development workshops (ie interview skills, self-leadership, etiquette and netiquette etc) and will also focus on theoretical workshops in lean manufacturing and project management.

The **WELA** team is also currently busy with a research project entitled: "Exploring the self-efficacy of engineering students at NMMU." As our nation's need for engineers grows, educators, government and industry leaders are becoming increasingly concerned with how to attract and retain women in this traditionally male career path. The promotion of gender equality and the empowerment of women across the globe by 2015 is

one of the 2005 United Nations Millennium Development Goals. The attraction, education and retention of women in science, engineering and technology (SET) is critical to the social-economic development of a country. Initiatives launched in recent years in sub-Saharan Africa recognise the critical need to promote women's participation in SET within higher education and industry. This research project aims to provide a supporting argument for the development of co-curricular interventions to improve self-efficacy of women engineering students.

As always, none of these fantastic new highlights could have been possible without the support from our fellow working women and female students who have been featured in all of our books. We look forward to a long and fruitful partnership with all of you as **WELA** continues to grow from strength to strength.

Please sit back and enjoy reading this booklet while you become just as inspired as we did.

Regards, **Dr Ann Lourens** 

HOD: Industrial Engineering Project leaders: WELA





#### What advice would you give to women entering a maledominated career environment or to those considering a career in a male-dominated field?

Firstly, believe in yourself. If you don't, no-one will treat you with respect. Acknowledge your ignorance when you do not know something and ask for help. This is the only way you will grow. Allow room for criticism and never allow your emotions to get better of you. Develop a thick skin that will protect you when you deal with people who do not see you as a colleague but as a woman who does not know what she is doing. Be willing to learn from everyone who can add value to your progress in your work environment whether they are qualified or not. Having a good working relationship with your colleagues is of utmost importance because no man is an island. Lastly, it is not always about how you start in life but how you finish. I am a testimony of that. I was not the most brilliant student but through determination and a will to succeed I achieved my goals and am still in the process of achieving more.

#### What do you do when you are not at work? (Hobbies etc)

Lately I have developed a passion for the discovery and lifestyle channels on television. When I am home I watch all day long. I also love spending time with those who are very close to my heart.

## What do you need for your current position (characteristics and qualifications)?

You need a qualification in Electrical Engineering - BTech/BSc, BEng or a national diploma.

You need a good work ethic as we deal with turnkey projects involving major contracts with service providers and if you do not have moral values you may end up making deals with the devil. You also need to be able to work under pressure from time to time

#### What are your goals for the future?

My short-term goal is to obtain my professional status as a professional technologist before the end of this year. I enjoy the power systems environment and see myself working in this field for as long as I can. However, in the near future I see myself in a senior management position within this industry. This is the reason why I need to finish my MBA in the next two years. I currently have a BTech in Business Administration. I strongly believe you need to strike a balance between the technical and managerial in order to make sound decisions.

## What is it like being a female in a typically male-dominated environment?

It is a challenging experience. You need to develop an elephant skin because if you let everything get to you, you will be a very unhappy person. This will have negative impact on your growth as an individual and on your ability to do your work. As a female you also need to prove yourself twice as much because you are not taken seriously especially at the beginning of your career.

#### If you weren't in your particular career what would you be?

I would be a biomedical technologist. This always fascinated me in high school.

# **Beverly Singh**

## Process Engineer Kestrel Renewable Energy, a subsidiary of Eveready(Pty) Ltd.

#### What do you do?

I am a process engineer at Kestrel Renewable Energy, a subsidiary of Eveready (Pty) Ltd.

## What is most challenging about your job? Or, what is the most challenging part about your job?

I would say managing my time between the various production areas which I support. To do this, I have to plan and prioritise my time carefully to ensure production continues.

#### Describe a typical day

I attend a meeting at 8am daily to discuss any production issues that require urgent attention. Thereafter, my time is divided between process development activities and providing support to production processes i.e. material flow, Kanben levels, tooling and equipment, updating necessary documentation and bill of materials.

#### What advice would you give to women entering a maledominated career environment or to those considering a career in a male-dominated field?

I would definitely encourage more women to choose a career in engineering. Being female does come with its challenges. You need to know what your strengths are and keep developing yourself. These days technology is advancing very quickly and you need to gain as much knowledge and experience as possible to stay ahead.

#### What do you do when you are not at work? (Hobbies etc)

This year I've completed my BTech in mechanical engineering studying part time. Otherwise I enjoy reading about the world and new technology. I also enjoy spending time outdoors, keeping fit and being with family and friends.

## What do you need for your current position (characteristics and qualifications)?

- A diploma or degree in mechanical or industrial engineering.
- To have good interpersonal skills and be able to work well within a team.
- Be able to work under pressure and manage several tasks at the same time.
- Be able to develop key skills in decision-making and problem solving.

#### What are your goals for the future?

In the near future I would like to get more involved in research and development. Also, I'd like to continue to develop key skills as an engineer through studies and possibly complete a course in project management.

In the long term I would like to own my own manufacturing company. I am very passionate about contributing to society and creating opportunities for the youth to develop and be inspired.



#### What is it like being a female in a typically maledominated environment?

Sometimes it's a challenge; you need to allow yourself the time to figure out what is going to give you a fulfilling career and what role you would like to play. My advice would be to get involved in as many things as you can, don't be afraid to ask questions and learn from your mistakes.

## If you weren't in your particular career what would you be?

To be honest I knew I wanted to study engineering from a very young age so I've never considered another career. Perhaps a racing car driver ... a girl can dream!

... gain as much knowledge and experience as possible to stay ahead ....







#### What advice would you give to women entering a maledominated career environment or to those considering a career in a male-dominated field?

Don't be scared off because it is a male dominated career. If you prove yourself, you will be accepted and welcomed with open arms. Very good advice that I was given is to ask questions; never be scared to ask someone for help or advice. By asking, you learn from the experienced and will go far.

#### What do you do when you are not at work? (Hobbies etc)

At the moment, I am still studying part time (Bachelor of Business Administration) so that takes up a lot of my free time. I like to travel all over South Africa to relax and take some time out.

## What do you need for your current position (characteristics and qualifications)?

You need to study Industrial Engineering and must be willing to prove yourself in this male dominated field. Hard work and commitment is a must to be successful.

#### What are your goals for the future?

I want to be a successful career woman in engineering and maybe in 10 years' time, become a lecturer.

## What is it like being a female in a typically male-dominated environment?

It is a challenge to be in a male dominateD environment, but it is an exciting challenge. Because the engineering field has been dominated by men for a long time, you have to show that you are capable of doing the same tasks. I challenge myself to show the men around me that I can perform the same tasks and better.

#### If you weren't in your particular career what would you be?

I think if I wasn't an engineer, I would be a teacher. I enjoy working with and teaching children.

# Nompumelelo Lingela

## Lecturer in Engineering & Related Design East Cape Midlands College

#### What do you do?

I am a lecturer in Engineering and Related Design at a college in the Eastern Cape. I teach National Certificate (Vocational) in levels 2, 3 and 4. Subjects I teach include: Engineering Fundamentals (Level 2), Engineering Practice & Maintenance (Level 3) and Professional Engineering Practice (Level 4). I have also taught a number of Report 191 subjects, such as Engineering Drawing at National Certificate Orientation (NCOR), N1 and N2 levels, Engineering Mathematics (NCOR, N1 and N2), Engineering Science (NCOR), Engineering Technology (NCOR), and Communication. I was acting senior lecturer for two years, which involved running the examinations, making class visits and checking both lecturer and student portfolios of assessment and portfolios of evidence.

## What is most challenging about your job? Or, what is the most challenging part about your job?

Working in a multicultural environment is most challenging. I also have to prepare my work before I teach so that I am not seen as a failure in a male-dominated environment. Always striving to be on top and above average in terms of communicating about engineering matters so that I can be respected by my male colleagues and they can see me as a professional woman in my own right.

#### Describe a typical day

I attend staffroom meetings, where we are briefed about

what is happening in the College. I put my work in order and make sure all the things I am going to use are working before starting the class (e.g. computer for PowerPoint, overhead projector, etc.).

#### What advice would you give to women entering a maledominated career environment or to those considering a career in male-dominated field?

You have to believe in yourself. Do not look at other people as men or women but as professionals. Ask if you do not understand – asking does not mean you are stupid.

#### What do you do when you are not at work? (Hobbies etc)

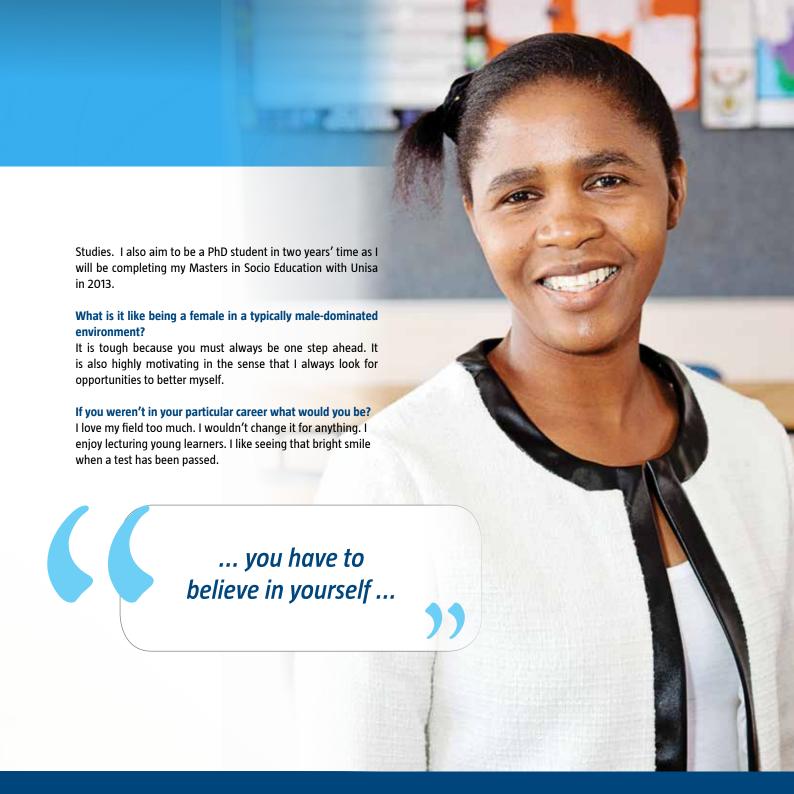
I like reading Engineering News, going for walks, and watching TV, such as Top Billing and SABC 3 talk shows.

## What do you need for your current position (characteristics and qualifications)?

You need an Engineering qualification with some industry experience. You also need to have a teaching qualification. You have to be energetic, be a good communicator and understand your audience. Be willing to help where necessary, be a good listener and a counsellor. Be a good adviser to learners about future opportunities.

#### What are your goals for the future?

I would like to become a Campus Manager in Engineering





a support capacity; work on new projects; prepare customer information depending on requirements; and update customer data, based on their concerns.

What advice would you give to women entering a maledominated career environment or to those considering a career in a male-dominated field?

Respect and trust cannot be gained [automatically] – it is hard earned.

#### What do you do when you are not at work? (Hobbies etc).

I am married with two adorable children so I am always trying to make up for lost time by doing what they feel like doing, which means outdoor activities most of the time.

## What do you need for your current position (characteristics and qualifications)?

I completed a National Diploma in Analytical Chemistry, a BTech in Quality Management, a short course in Project

Management and many other courses related to the quality field in the automotive industry, e.g. SPC, FMEA, Control plans, APQP, auditing, etc. You need to be very principled, disciplined, hardworking and patient, with a good sense of humour, you need to be tenacious and have and good people skills.

#### What are your goals for the future?

To advance into a senior management position

## What is it like being a female in a typically male dominated environment?

Guys need to feel comfortable before they let go — and that depends on whether you have earned their trust and respect and proven to them that you do have the skills to form part of the team.

If you weren't in your particular career what would you be? A stay-at-home mom

# Marise Ferreira Quality Manager Pi Shurlock Engineering

#### What do you do?

I am a quality manager at Pi Shurlok Engineering.

## What is most challenging about your job? Or, what is the most challenging part about your job?

The most challenging aspect of my job is earning the respect of workers, colleagues, management, suppliers and customers; to have a long-term goal and not get despondent when things take longer than expected; to have the patience to deal with complicated situations.

#### Describe a typical day

My day starts at 5am and I am usually at work by 6.30am even though I officially start at 7am. I start the day by walking through the plant and greeting each operator individually by name. I ask them how they are and listen to their comments. One gets to know them and can be of assistance when they have problems which may affect their work. I check on the quality being produced by each machine and any issues that may have arisen overnight. I then attend the production meeting of our biggest customer. This gives the customer the opportunity to raise any concerns they may have. If there is a concern, I immediately arrange for staff to inspect, correct or replace any stock concerned. This happens infrequently, but when it does happen, a quick reaction is what counts most.

During the morning, I communicate with staff, customers and suppliers. At present, we are busy with a big project to introduce a new product. This takes up a lot of time. Then there is other routine work to complete: process and product audits, system audits, training, calibration, dealing with quality issues and other production queries. There is always some decision to be made or a problem to be solved.

I close my day with a final walk through the plant.

#### What advice would you give to women entering a maledominated career environment or to those considering a career in a male-dominated field?

Know what you want out of the job. Know how you plan to get there. Be bold. Don't get despondent when at first you don't succeed. Just go at it again. Don't try and be male, just be yourself. Don't be scared to take on a challenge, no matter what the size. Don't be afraid of making changes in your life. I changed direction from the analytical chemistry environment of a water test laboratory to the organic chemistry of paint manufacturing to machining of steel and, recently, plastic manufacture.

#### What do you do when you are not at work? (Hobbies etc)

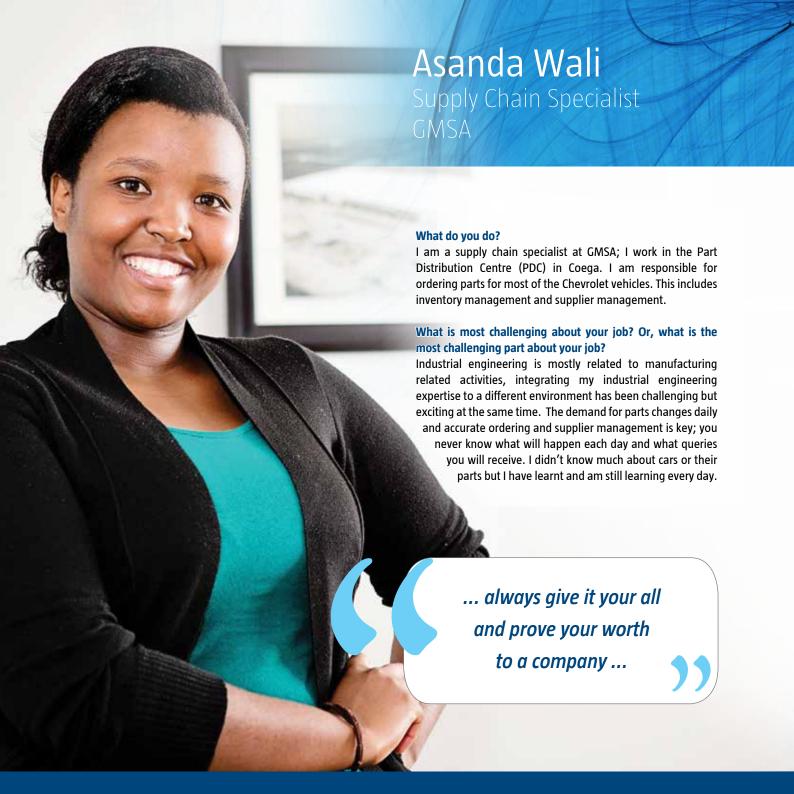
I share a household with my married daughter and her husband. This allows me some time for myself but it also means I have company and support when I need it. My current project is the building of an extension to our home. When I am not busy with this project, or chores around the house, you can usually find me with my camera, finding something to photograph. Photography is both challenging and very rewarding. Otherwise you will find me with my nose in a book.

## What do you need for your current position (characteristics and qualifications)?

Patience. Taking a quality system and turning it around to a point where you have little or no customer complaints and as few products as possible that have to be reworked or discarded takes time. You are building Rome. But with confidence and attention to detail it can be achieved.

I have a BTech in Quality, City and Guilds of London







#### Describe a typical day

A typical day consist of daily orders that I have to put through to suppliers; forecasting; managing inventory levels; managing supplier performance, examining new model launch readiness reviews — this means setting up of new parts, pricing and ordering them to make sure they are ready before the new vehicle is launched - managing supplier cost; daily reports and day-to-day queries.

#### What advice would you give to women entering a maledominated career environment or to those considering a career in a male-dominated field?

Never question your abilities. Everyone makes mistakes. What is important is learning and growing from them. Don't be afraid to ask questions and get help from your colleagues. Gender has nothing to do with it as you all worked hard to get the same qualification. Always give it your all and prove your worth to the company.

#### What do you do when you are not at work? (Hobbies etc)

If I'm not at work, I'm usually with my sisters and friends chatting or watching a DVD. I love baking, reading and singing.

## What do you need for your current position (characteristics and qualifications)?

A degree/diploma in Industrial Engineering or Purchasing

and Logistics. You must have good knowledge of Excel and PowerPoint because you have to present many reports. You should also be quick and alert because the time you take to fix a query influences sales. You should have strong mathematical abilities because we work with figures on a daily basis. Further, you should have good people skills as you constantly engage with people from other departments and suppliers.

#### What are your goals for the future?

I want to study further as you should never stop learning; I want to gain more knowledge in other non-manufacturing related companies and see how I can apply my industrial engineering skills to gain better understanding and further experience.

## What is it like being a female in a typically male-dominated environment?

It has its challenges but it depends on how you react to them. I've learned not to take everything too seriously. I just laugh off negative remarks and jokes. Males generally think females are not capable of getting the job done. This gives me the advantage because I know I am capable of doing the job. I focus on fulfilling my goals.

If you weren't in your particular career what would you be? I would be a climatologist or an events planner.

# Anthonette Miller Industrial Engineering Manager Volkswagen Group South Africa

#### What do you do?

I am the Industrial Engineering (IE) manager at Volkswagen Group South Africa, responsible mainly for productivity improvements and direct headcount planning. The interesting thing is that I started in the IE Department at VWSA and worked there for 18 months. I then spent five years in the finance department, responsible for export projects, and two-and-a-half years in the MDs office as his assistant. After 10 years, I am back in Industrial Engineering.

## What is most challenging about your job? Or, what is the most challenging part about your job?

Change management is the most challenging part of my job. Due to the fact that we implement improvements, which eventually lead to the transfer of people from one production area to the next requires extensive change management and negotiation skills. We need to convince the production people of the benefits, in order for them to buy-in and support the productivity improvement initiatives. Without their support, we cannot succeed.

#### Describe a typical day

My day always starts with the production meeting where we discuss the difficulties of the shop-floor experiences. We are a support department and help where possible. Thereafter, we review internally the progress made for each of the productivity initiatives under investigation or being implemented in each of the production areas, i.e. press shop, body shop, paint

shop, assembly, engine plant, etc. We also manage the direct headcount of each of these areas and ensure that the correct number of employees is reporting to the correct areas. This requires frequent transfers of people from one area to the next. We are also responsible for forecasting the headcount requirements for the next 12 months.

#### What advice would you give women entering a maledominated career environment or to those considering a career in a male-dominated field?

I can strongly recommend it. I have never felt left out or uncomfortable being the only woman in a meeting of between 10 and 20 men. It's like this in 80% of the meetings – I am the only woman. When the meeting starts "morning gents", I do not feel upset and unnoticed, but rather prefer the fact that I am seen as part of the team and do not need to be singled out. I have also learned that the woman who insists on being greeted separately, is not accepted as generously by the men.

#### What do you do when you are not at work? (Hobbies etc)

I cycle and go to spinning classes in the evenings. I also do art and like painting or drawing pictures. I swim with my baby on Saturdays at Water Babies.

## What do you need for your current position (characteristics and qualifications)?

Resilience. You need to be analytical and pay attention to detail. You cannot easily give up.





## Belinda van der Wat

Lecturer NMMU, Port Elizabeth

#### What do you do?

First of all, I am a wife and mother of three, who happens to be qualified as a professional engineer. I have been working in the engineering industry as a consulting engineer for the past 17 years. This year, I started my lecturing career at NMMU with great expectation and excitement.

## What is most challenging about your job? Or, what is the most challenging part about your job?

In industry the most challenging was balancing both my personal and professional life, as well as constantly having to prove my competence as a woman in a male-dominated work environment. Initially people would not take me seriously, until they realised that I have the qualification and know what I am talking about. I think that lecturing in the Engineering Faculty will probably have many of the same challenges.

#### Describe a typical day.

I rise approximately 5:30am and help in getting the kids ready for school. After a good breakfast and dropping the little one, I attempt to go to gym before starting my work day which did consist of design, report writing, site visits and meetings. More recently I've been preparing for my new task as a lecturer, getting to know my new environment and

Have confidence in yourself and your own ability!

"



colleagues, being involved in student orientation, new lecturer initiation and orientation. I have also had my first taste of marking examinations and student projects. This year my days will be filled with preparing new engineering students to be qualified, self-motivated and imaginative civil technicians when they complete their diploma.

#### What advice would you give to women entering a maledominated career environment or to those considering a career in a male-dominated field?

Have confidence in yourself and your own ability! As a woman, you have achieved exactly the same academic qualification as your male counterpart. Your theoretical knowledge should be exactly the same. Don't let anyone intimidate you and tell you otherwise. In my opinion, as females we have an advantage as we are expected to do so much more in a day than just our jobs, so we learn to prioritise much faster than the average male professional.

#### What do you do when you are not at work? (Hobbies etc)

Currently my eight-month-old son keeps me quite busy with walks around the block. As a family we like to spend time in the wild. My husband introduced me to 4x4 outings and camping, which I now thoroughly enjoy. The outdoors brings a type of calm which makes you relax and forget about busy work schedules. We also like to take the jet-ski out onto the water and have fun in the sun.

## What do you need for your current position (characteristics and qualifications)?

I graduated from Rand Afrikaans University RAU (today it is known as UJ) in 1993 with my BEng degree in Civil Engineering.

After spending some time overseas, working at a ski resort and travelling, I returned to South Africa and commenced my career at a consulting firm in Port Elizabeth. Once I gained enough experience, I was able to achieve my professional status in 1998. To be a good engineer, you have to have a passion for what you do and want to solve problems. Engineering is synonymous with innovative thinking, and if you have a desire to create and improve all that you see and use in your everyday life, you are a candidate for civil engineering. I would like to carry over some of this passion to my students.

#### What are your goals for the future?

My goal, like most new lecturers, is to become a good lecturer. This will be someone who the students respect, look up to and who can inspire them to be successful in their chosen career path. Only after I am successful in "teaching", will I perhaps aspire to pursue my master's degree in engineering.

## What is it like being a female in a typically male-dominated environment?

Personally, I like it because I enjoy a challenge. This challenge started years ago when teachers told me I was not able to take technical drawings and electronics because I am a girl. I proved them wrong and excelled in these subjects. As a result, it opened many possibilities and finally my career path.

#### If you weren't in your particular career what would you be?

I would probably be an architect, or work behind the scenes of a movie as a set creator. In short, it would have to be some type of career which would give me the ability to create or fix something.

## **Annette Cloete**

# Continuous Improvement Specilist Fresenius-Kabi Manufacturing SA

#### What do you do?

I am a continuous improvement specialist at Fresenius-Kabi. My role in includes solving problems daily using a structured approach, capacity improvement, planning optimisation and reducing costs to improve budget.

## What is most challenging about your job? Or, what is the most challenging part about your job?

Getting people to understand the benefits of continuous improvement, and creating the willingness and openness within the organisation to change and improve.

#### **Describe a typical day**

A typical day starts nice and early – I review the previous day's actions, attend a daily production meeting, set up sessions for coaching on problem solving, run training sessions, and give feedback on projects. I also review budget expenses and demand, and complete capacities vs budget vs demand.

#### What advice would you give to women entering a maledominated career environment or to those considering a career in a male-dominated field?

Stand your ground, understand what you are talking about and talk facts.

## What do you do when you are not at work? (Hobbies etc) I relax with my family.

## What do you need for your current position (characteristics and qualifications)?

You need an Industrial Engineering qualification, Lean training, patience and endurance.

#### What are your goals for the future?

I plan to complete my MBA and, in five to 10 years' time, work my way up to a director level.



## 2013 wela Leadership Development Programme

#### **Junior members**

- Student counselling development workshops
- Professional development workshops
- Academic development workshops

#### **Senior members**

- Mentorship
- Technical project
- ▶ Engineering related short courses
- Factory visits
- Panel discussion

#### **Working welas**

- 7 Choices for successful women
- Project management
- Lean workshop

Depending on funding, study abroad opportunities and bursaries will be made available to wela students.

## **Vision**

To be recognised as the first choice university for supporting women in engineering.

## Mission

To offer a diverse range of support and developmental services to women in the field of Engineering.

## Goals

- Establish Engineering as a desirable career aspiration for girls and women.
- Develop retention and growth strategies for women already studying in the field of engineering.
- Mentor, assist and advance women already in the field of engineering.
- Focus on academic, professional and personal development and be of service to the community.



THE LOGO: A metamorphosis from mechanical to organic shapes. The mechanical shape symbolises engineering, while the organic flower-like shape represents femininity. The logo symbolises the evolution of younger women, moulded by their mentors to grow into successful engineers. It also represents the evolution of an idea from the initial concept stages to the actual realisation of an engineering project. The logo radiates the association's initiative to change the engineering sector and establish a support structure for women in engineering.

Wela is the Xhosa word for change/transition.

(Logo design: Milla Theron, NMMU Graphic Design student)







## **Contact**

Nicole Truter Tel: (041) 504 3645 RightFax: (041) 504 9645 Nicole.Truter@nmmu.ac.za North Campus, Summerstrand Nelson Mandela Metropolitan University PO Box 77000, Port Elizabeth, 6013

metamorphosis from mechanical corganics hapes the mean of the successful engineers. It also represents the evolution of an engineering of a metamorpho at shape symbolises engineering. A metamorpho at shape symbolises engineering, while the organic flass the evolution of younger women, moulded by the esents the evolution of younger women, moulded by the esents the evolution of an idea from the initial conceptor. The logo radiat supported by sociation's initiative to the engineering. A metamorphoral shape symbolises engineering, while the organic flass shape symbolises engineering.