



OFFICE OF THE DEPUTY CITY MANAGER HUMAN SETTLEMENTS & INFRASTRUCTURE CLUSTER

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The Engineering Winter School 2015

The University of KwaZulu-Natal (Howard College campus) in partnership with eThekweni Municipality Human settlements, Engineering and eThekweni Transport Authority and Trading Services Cluster hosted the Engineering Winter School program which was scheduled for the 13th of July until Friday the 17th of July 2015 at the Unite Building.



Learners from various schools were given the opportunity to participate in entertaining exercises to help them enhance their understanding of the Engineering field. These exciting events set to broaden the learners mind when it comes to the engineering field. Exciting field trips were arranged and site visits such as the Navy Base and Moses Mabhida were part of the exciting fun filled excursion.

50 Learners were selected from a quintile one school in the Cato Manor Area Based Management District to participate in the program. A quintile one school is a school that is desperately under-

resourced and has learners who come from extreme impoverished backgrounds. Hence, these learners still produce astonishing results.



eThekweni Municipality aims to address scarce skills in the City by promoting Maths and, improving learner's performance in Science, Technology, Engineering and Maths, offering career guidance and exposure for sensible career decision making, providing a platform for work experience and mentorship programmes and career excursions. This is the integral part of the built environment creating a platform for growth, empowerment and skills development.

The Support Services team was there throughout the week as honourable partners to witness the learner's determination and enthusiasm to learn more about a field which is in desperate need for more and new innovative ideas as the world is constantly changing and so are the needs of its people.

13th July 2015 – Monday

Dr Mpilo Ngubane – Head of EThekwini Municipality Academy (EMA)

“Even though education is a right, take it as a privilege because only a few have got the opportunity to be educated”, Mr Ngubane advised the learners. Mr Ngubane has obtained 9 qualifications and encouraged the learners that anything is possible if they choose to invest in themselves. Mr Ngubane informed the learners that as from next year his Cluster will be offering bursaries and that he has asked Mrs Veena Naidoo to submit to him a certain number of high flying maths and science learners that the Municipality will be presenting bursaries to and after their studies those students are set to get employment from the Municipality.



Dr Mpilo Ngubane and Mr Mhlengi Gumede

Mr Mhlengi Gumede – Manager of the Cato Manor Area Based Management

Mr Gumede told an inspiring story of his life thus showing that hard work and perseverance pays off. Mr Gumede motivated the learners to be innovative and dynamic thinkers as this will lead to them being exceptional leaders in the future.

Mrs Veena Naidoo - EThekwini Municipality

Mrs Naidoo played the Life of an Engineer DVD so that the learners can be informed on what the Municipality offers for young people inspiring to be engineers.



Mr MG Ntunka – Chemical Engineering Project

Mr Ntunka taught the learners how to make alcohol and the learners got the opportunity to go experiment and make their own alcohol using ethanol and water.



Noel Powell – Engineering - The Future

Mr Powell shared some wise words mixed with humour, the learners were told to work hard and never give up on their dreams and aspirations.



Ms Ingrid Duma – South African National Blood Service

The learners watched a short DVD depicting the importance of donating blood and how ones donations could save a life. There after she allowed the learners to ask her any questions regarding to donating blood and in exchange she gave the learners cool gifts. The learners also received water bottles, pens and lanyards.



Ms Ingrid Duma

14 July 2015 - Tuesday

Gareth Lagerwall - School of Agricultural Engineering in UKZN

Mr Lagerwall highlighted the group with some facts on engineering for food and fibre production. He went on to informing the learners about the importance of Engineering for food processing and how engineering plays a role in maintaining and adding value to food by freezing, packaging and sealing it.



Mr Lagerwall and Mr Workneh

Professor Tilahun Seyoum Workneh - Engineering of the School of Engineering

Wind power machines and other machines that are used in agricultural farming were showcased. Mr Seyoum Wrokneh continued to show the learners wind mill models and irrigation machines and played some videos for them showing the various processes of ensuring the machines are used correctly and what the results look like.

Rogerant Tshibangu - Former UKZN Engineering Student

Mr Tshibangu gave a very fun and exciting talk about "Life as a student". The former student went on to inform the learners as to why the engineering field is fascinating and how it aided to his curiosity about how all of things that make our living simpler and easier are made. Mr Tshibangu made emphasise on how engineering is everywhere, for example riding a car needs electronic engineering. Mr Tshibangu built a voice wheelchair when he was doing his final year which got featured on YouTube.

"Without electronics, there's no life" Mr Tshibangu concluded.

Dr Tahmid Quazi (Senior Lecturer) - Computer Engineering Programme

Dr John Poole - Computer Engineering Programme

Dr Remy Tiako (Lecturer) - Electrical Engineering

The learners were given a 2 hour activity task to building an Electronic Dice in the Electrical, Electronic & Computer Engineering lab. A short video was played to demonstrate how they will go about building the Electronic Dice. They were taught about the schematic of the circuit, the PCB layout, the copper layout, parts list, tools and as well as how to solder in order to complete the task.



Martha Bishai - NGO Umkhumbane Schools Projects

Martha Bishai's programme is aimed at linking learners to higher education.

She runs maths programmes, 90 minutes Saturday learning lessons, during the week she has mentors coming in from UKZN to learner classes.

Overall she loves working towards inspiring greatness to learners, the future Engineers and Scientists.



15 July 2015 – Wednesday

Professor Jeff Bindon - Mechanical Engineering Department

The learners were tasked with a Mechanical project that included using balloons and other sourced materials e.g. elastic and sticky tape.

The objective of the project was to modify or come up with a strategy for the car to move in a faster speed.

The aim of the project was to expose learners to the world of mechanics, how mathematics and science combined and create a simple functioning mechanism.



Mr Benji Naidoo - EThekwini Municipality: Engineering Unit

The learners were given insight on the different types of Engineers. Mr Naidoo highlighted the job description of an Engineer who works under the employment of EThekwini Municipality.

The bursary requirement and application offered by EThekwini Municipality was explained in detail.

In his closing Mr Naidoo reminded the learners to be vigilant and strives to meet the requirements required in the entry points system to be considered in tertiary institutions.



16 July 2015 – Thursday

Navy Base

“The South African Navy's core business is to ‘fight at sea’ thereby protecting South Africa’s coastlines and marine resources. For this reason, the South African Navy uses ships and submarines to conduct its business and its fleet is based in Simon’s Town (Cape Town). The South African Navy has Naval Stations in Durban and Port Elizabeth.” The learners were given a tour on the ships and were then informed of what it takes to work at the Navy Base.



Moses Mabida

“The multi-disciplinary nature of the stadium’s design permits it to host a wide range of sporting and cultural events.”

The learners were taken on a tour in and around the stadium. The tour guide shared some interesting facts about the stadium such as, “the roof is attached to the arch by 95 mm-diameter steel cables”. The learners were then given the chance to ask questions about the stadium.



17 July 2015 – Friday

Denise O'Reilly - Application and Selection Processes and Procedures

The learners were made aware of the programmes that are available at the University of KwaZulu-Natal.

- Agricultural Engineering
- Chemical Engineering
- Civil Engineering
- Computer Engineering
- Electronic Engineering
- Electrical Engineering
- Mechanical Engineering
- Land Surveying
- Property Development

Learners are to apply via Central Application Office (CAO). They are then urged to complete biographical information and ensure contact information is correct.

The Application and Selection Procedures are discussed along with all that is required from students to be considered for the course that they are applying for.

Amazing Race

The learners then formed teams and played a game called Amazing Race that had them running around the Campus and left them breathless.

A farewell lunch was served as the learners were treated to a delicious braai.

