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CONTENTS

18 TUK PROMOTES MORE FACULTY MEMBERS TO FULL PROFESSORS

3 SUCCESS OF KENYAN ECONOMY IS IN YOUR HANDS: TUK LEADERSHIP TELLS GRADUATES

11 BE INNOVATIVE IN YOUR DEEDS - CHANCELLOR ADVISES GRADUANDS

12 FRANCE TO PARTNER WITH KENYAN VARSITIES

13 TU-K STUDENTS MOVE ARCHITECTURE LANDSCAPE A NOTCH HIGHER

17 SEVEN SEAS CEO URGES VARSITY STUDENTS TO INNOVATE

22 TECHNO CITY CEO WANTS UNIVERSITY STUDENTS TO VENTURE IN STARTUPS, INNOVATIONS

25 TSHWANE UNIVERSITY OF TECHNOLOGY TO TRAIN T-UK TECHNOLOGISTS AND TECHNICIANS

27 TU-K MOVES UP IN GLOBAL RANKINGS

34 TU-K SCIENTIST RECEIVES PATENT FOR BIODIESEL INVENTION

35 LUDWIG QUARTET FROM THE US VISITS TUK

36 CHAMWADA: JOB MARKET DEMANDS PERSISTENCE, VIGOR & PERSONAL INITIATIVE

38 US-BASED COMPANY TO INSTAL MODERN TECHNICAL LEARNING EQUIPMENT

April 2016

3
MESSAGE FROM THE VICE-CHANCELLOR

PUT MEANING TO “EDUCATION AND TRAINING FOR THE REAL WORLD”

The recent Kenyan Universities Exhibition held at Flamingo Beach Resort & Spa in Mombasa gave an opportunity to our students to showcase samples of their innovations. It turned out that the TU-K students, compared to their counterparts from other universities, have a lot to offer the world. This echoes the institution motto “Education and Training for the real world”. Their impressive innovations gave a real meaning to our motto because theirs are not theoretical but offer solutions to challenges facing humanity.

The university will continue supporting student and staff innovations and encourage the industry to develop interest and commercialise them to make a real impact in society.

I am glad to note that our staff are actively conducting research and publishing in high-impact international journals. One of the publications reported in this edition by Prof Isaac Orina deserves special mention. He has demonstrated that ingredients found in Kenyan Purple Tea could be used as a remedial therapeutic intervention to reduce toxic post-treatment reactions of medication used in treating sleeping sickness. If the drug manufacturers take keen interest in this study, a solution to counter the negative effect of Sleeping Sickness drugs can be found and made available to the victims across the world.

To further illustrate the scientific prowess of our members of faculty, Dr Eric Ogur’s Biodiesel invention has received a patent from Kenya Industrial Property Institute. The Biodiesel project which began in 2012, involves making fuel from waste vegetable oils and presents an inexpensive raw material for mass biodiesel production. Biodiesel use has recently experienced a major surge worldwide with a rapid expansion in production observed in the world. Its similar characteristics to petroleum derived oil make it a strong alternative to diesel oil. This is the kind of research with direct impact on the environment and humanity in general that, as a university, we should encourage.

I wish to encourage other members of faculty to follow suit and apply for patents for their inventions. If and when the industry takes up the innovations and commercialise them, the individual researchers and the university will financially gain a lot and in the process help create more jobs. It is a fact that the number of patents received by members of faculty greatly improves any university's global ranking as well as local standing as an institution creating knowledge.
Joseph Kiplang’at is now a Professor of Library and Information Science at TU-K. Before his TU-K appointment in 2013 as Deputy Vice-Chancellor Administration, Planning and Infrastructure, he was the Moi University - Nairobi Campus Director, a position he held since 2006. He was appointed Associate Professor in February 2010 at the School of Information and Communication Studies, Moi University. Prof Kiplang’at holds a PhD in Library and Information Science from University of Zululand, South Africa (2004), Master of Philosophy Degree in Information Sciences (LIS) (1995) and a Bachelor of Science Degree in Information Sciences (1991) both from Moi University. He has successfully supervised 12 doctorate students and more than 30 masters students. Prof Kiplang’at has published two books, 18 papers in refereed journals and 11 publications in peer reviewed conference proceedings.

Suki Mwendwa has been appointed Professor of Design. Prof Mwendwa is currently the Deputy Vice-Chancellor (DVC) – Technology, Innovation and Partnerships a position she has held since 2013. She holds a PhD in Architecture/Social and Cultural Issues in the Built Environment from UC Berkeley, United States (2000), Master of Arts Degree in Human Environment Relations/Interior Design from Cornell University, USA (1985) and a Bachelor's Degree in Design from University of Nairobi (1981).

Prof Mwendwa previously served as a Senior Lecturer at University of Nairobi rising from a Tutorial Fellow between 1985 and 2010. She has in the past served as KPUC Deputy Principal (2010), Director School of Arts and Design – UoN (2005-2008), Chairperson, Department of Design - UoN (2001-2004). She is currently supervising two PhD students and has in the past supervised six Masters Degree students. She is a member of International Association for People-Environment Studies (IAPS), American Biographical Institutes and consults for Ministry of Water, Serena and Sarova Hotels, Museum of Kenya, Aga Khan University among others. She has widely published in peer reviewed journals.

Emily Akuno has been appointed a Professor of Music at the Technical University of Kenya. She is the current Executive Dean, Faculty of Social Sciences and Technology. Previously she was the Head of School Music, at the University of KwaZulu-Natal, Durban, South Africa between 2007 and 2010. Prof Akuno previously held various senior positions at Kenyatta University: Dean of Students (2005-2006), Director, School of Music (1998-2000) and Chair of the Department (1998-2000). She has taught graduate and undergraduate courses in Music between 1987 to date. Prof Akuno holds a PhD in Music from Kingston University, Surrey United Kingdom (1997), a Master of Music from Northwestern State University, USA (1988) and a Bachelor of Arts degree from Kenyatta University (1986).

She has successfully supervised 22 Masters and 9 PhD students. She has 16 publications under her belt and has authored and co-authored 22 books and book chapters. She is currently the Treasurer at the International Music Commission (IMC), a position she has held since 2012.
Prof Alex M. Muumbo

Alex Muumbo is now a Professor of Mechanical Engineering at TU-K. Before joining TU-K in May 2014, he was appointed Associate Professor at Moi University in 2011 where he served in various capacities.

Prof Muumbo holds a PhD in Materials Engineering – Simulation from Nagoya University, Japan (2003), Master of Science Degree in Advanced Manufacturing Systems Engineering and Management from University of Bradford – United Kingdom (1994) and a Bachelor’s Degree in Production Technology, Moi University (1989).

Prof Muumbo is the current Executive Dean at the Faculty of Engineering Science and Technology. He is a member of various professional bodies among them Institution of Engineers Kenya, United States Distance Learning Association among others. Beginning his teaching career as a Graduate Assistant at Moi University in 1989, Prof Muumbo gradually rose through the ranks to Head Mechanical and Production Engineering Department.

Prof Muumbo was appointed ICT Director in 2005 where he served for nine years before his appointment at TU-K. He is currently supervising one PhD student and has successfully supervised 4 Masters Students. He has carried out five research projects and has published 38 papers in reviewed journals.

Prof Peter Matu

Peter Maina Matu is now a Professor of Linguistics. Prior to his promotion, he was an Associate Professor in the Department of Linguistics and Communication.

Prof Matu holds a PhD in English – University of Free State, South Africa, a Master of Arts Degree in Linguistics and African Languages from the University of Nairobi and a Bachelor of Arts Degree from the same university.

He is currently the Director, School of Information and Communication Studies.

Before joining TU-K in 2011, Prof Matu was appointed as Associate Professor in the Department of Linguistics, Languages and Literature, Maseno University, where he chaired the Postgraduate Committee, and served as Programme Coordinator, Departmental Examination Officer. He also acted as Head of Department rising from Tutorial Fellow in the Department of English (1991-2011).

Prof Matu has supervised 28 Masters and six Doctoral students. He has 28 publications under his belt.

Prof Maina Maringa

Maina Maringa has been appointed Professor of Mechanical Engineering TU-K. He previously served as Associate Professor of Mechanical Engineering at the Kigali Institute of Science and Technology.

Maringa holds a PhD from University of Manchester, United Kingdom (2002), a Master of Science Degree in Applied Mechanics from University of Nairobi (1995), Bachelor of Science Degree in Mechanical Engineering from University of Nairobi (1987) and a Post Graduate Diploma in Hydro Power Development from Norwegian Technical University, Norway (1987).

Before joining TU-K in 2011, he was the Founding Ag. Vice Principal – Integrated Polytechnic Regional Centre Kigali, Rwanda (2009-2011), Rwanda Workforce Development Authority Founding Ag. Deputy Director General. He rose from an Assistant Lecturer to Senior Lecturer at JKUAT between 1992 and 2006. Prof Maringa previously served as the Acting Dean of Faculty of Engineering Science and Technology (FEST) and as the Head of School of Engineering Science and Technology. He is a consultant on Composite Engineering Materials, Hydropower Design and, Operations and Maintenance, Ultrasonic and Vibration Testing, and Stress Analysis. Maringa’s has published 28 times and is the founding chief of two International refereed journals. He is currently supervising two Doctorate students and three Masters Students. Prof Maringa is a box guitar player who has so far composed and produced eight songs.
ASSOCIATE PROFESSORS

Dr Alfred Orina Isaac

Dr Orina is now Associate Professor in the Department of Pharmaceutical Science and Technology at TU-K. Prior to joining TU-K he was a Lecturer at the Abu Dhabi University (2011) and the University of Nairobi (2012) where he lectured in Thermodynamics.

He has also worked as Lecturer at Al Ain International Aviation Academy, Swindon and Uxbridge College-UK, University of Islands and Highlands (Scotland) and British Army Aviation College. He has also worked as a consultant with Bae Systems Plc. (UK) and QinetiQ Plc. (UK). Dr Orina also worked as an Engineer at the East African Railway and Kenya Airways between the years 1971-1993. He holds a PhD from Brunel University (1999). He graduated from the University of Hertfordshire in 1995 with a BSc in Engineering Studies.

Dr Orina completed his Diploma in Air Transport Southhall College of Technology London in 1975, and holds a certificate in Aeronautical Engineering from the Kenya Polytechnic (1974). He is a Chartered Engineer (UK Engineering Council), a corporate member of the Royal Aeronautical Society, and a member of the American Institute of Aeronautics and Astronautics. In 2013, he was appointed as external examiner at the Cranefield University (UK). He has successfully supervised 3 PhD students and 12 Masters students and has 6 publications under his belt.

Dr Gordon Wayumba

Dr Wayumba has been promoted to the position of Associate Professor in the Department of Surveying and Geospatial Science. Prior to his promotion he was a Senior Lecturer at the Technical University of Kenya (2010-2015), Lecturer in the Department of Geospatial Science and Space Technology at the University of Nairobi (1991-2009).

Dr Wayumba carried out extensive administrative duties at the Department of Survey in the Ministry of Lands as a district surveyor, provincial surveyor, and superintendent surveyor. (1976-1991).

He holds a PhD in Geospatial Engineering from the University of Nairobi (2013), a Master's Degree in Remote Sensing and Aerial photogrammetric studies from Cornell University (1983) and a Bachelor degree in Surveying and Photogrammetry from the University of Nairobi (1976).

Dr Wayumba has 8 publications under his name and has successfully supervised 13 Masters students and 5 PhD students in progress.

He is a member of the Institution of Surveyors of Kenya (MISk), a certified and licensed land surveyor in Kenya.

Dr Faustin Ondore

Dr Ondore has been promoted to the position of Associate Professor in the Department of Aerospace and Aviation Engineering, TU-K. Before joining TU-K in 2012 as an Aeronautical Engineer, he was a Lecturer at the Abu Dhabi University (2011) and the University of Nairobi (2012) where he lectured in Thermodynamics.

He has also worked as Lecturer at Al Ain International Aviation Academy, Swindon and Uxbridge College-UK, University of Islands and Highlands (Scotland) and British Army Aviation College. He has also worked as a consultant with Bae Systems Plc. (UK) and QinetiQ Plc. (UK). Dr Ondore also worked as an Engineer at the East African Railway and Kenya Airways between the years 1971-1993. He holds a PhD from Brunel University (1999). He graduated from the University of Hertfordshire in 1995 with a BSc in Engineering Studies.

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PROMOTIONS
Dr Thomas Onyango Mboya

Dr Thomas T.O. Mboya has been promoted to the position of Associate Professor – Department of Industrial and Engineering Mathematics at The Technical University of Kenya.

He is currently the Chairman and Senior Lecturer at the Department of Industrial and Engineering Mathematics. In the past he was chairman at the University’s Department of Statistics and Computational Mathematics.

Mboya holds a PhD in Computational Fluid Dynamics from the University of Leeds, United Kingdom – 2009, a Master of Science Degree in Applied Mathematics from the University of Nairobi (1999) and a Bachelor of Education Degree in Mathematics and Physics from Egerton University - 1994.


He is currently supervising five doctoral students and has supervised 23 Master of Science students. He has also served as an internal and external examiner.

He has completed 16 Research Projects and Publications.

Dr Omondi Oketch

Dr Omondi Oketch is now an Associate Professor in the Department of Language and Communication Studies. Prior to his promotion he was Senior Lecturer and Chairperson in the Department of Language and Communication Studies at TU-K.

Before joining TU-K, Oketch worked as a Part Time Lecturer at Kenyatta University, External Examiner at the University of Western Cape, South Africa, and Adjunct Lecturer at the United States International University as well as Lecturer at Bondo University College, Kenya Polytechnic University College, Catholic University of Eastern Africa and Moi University, Maseno University among others.

Oketch holds a PhD in Linguistics from the University of Western Cape, Cape Town, South Africa - 2006. He is also a graduate of Maseno University where he graduated with a Master of Arts in English, (2000). In 1994 he graduated with a Bachelor of Education Degree in English and English Literature from Moi University. He has 17 publications in peer reviewed journals and has authored and co-authored 3 books. He is a member of the Association of Translation and Interpreters.

Dr Stephen Kionga-Kamau

Dr Kamau has been promoted to the position of Associate Professor of Engineering. Prior to joining TU-K, he was a Lecturer and Senior Lecturer at the University of Nairobi (1977-1994), and (1996-2007). He also served at the United Nations Environment Programme (UNEP) (1994-1996) as a Programme Officer in charge of industry, energy, and chemicals for the Africa region.

He was previously Vice-Chairman and Chairman at the Kenya Institute of Chemical Engineers, and a member of the National Council of Science and Technology, Senate of the University of Nairobi. He is also a member of the Academic Evaluation Panel of the Engineering Registration Board.

Kamau holds a PhD from the London University (Imperial College of Science and Technology (1979) and is an alumni of Loughborough University of Technology, England where he graduated with a BSc in Chemical Engineering and MSc in Advanced Chemical Engineering. (1970-1975)

He has supervised over 10 undergraduate and graduate students and has 17 peer-reviewed papers under his name.
Dr George Odhiambo Amolo

Dr George Odhiambo is now an Associate Professor in the Department of Technical and Applied Physics. Amolo served as Associate Professor at University of Eldoret/Chepkoilel University College since the year 2012. He also served as Lecturer and Senior Lecturer at Moi University (1995-2008, 2008-2012 respectively) and Chairman at the School of Science Research Committee (2008-2014). He was previously Editor in Chief of the East African Journal of Pure Applied Sciences (2010-2014).

Dr Amolo holds a PhD in Physics from the University of Witwatersrand, South Africa (2007), an MSc in Physics from the University of Nairobi (1994) and a Physics Degree from Moi University (1990).

With 18 publications under his belt, Dr Amolo has successfully supervised 3 PhD candidates and 14 Masters students. He is a member of the Physics Society of Kenya and the Kenya National Academy of Sciences.

TOP CHINESE OFFICIAL VISITS TU-K

The VC, Prof Francis Aduol (second left), Education Cabinet Secretary, Dr Fred Matiang’i and the Chairman of the Standing Committee of the National People’s Congress of China, Mr Zhang Dejiang (fourth from left) are briefed by an official of Avic International on some of the products the Engineering Workshop is capable of producing. Mr Dejiang visited TU-K on Friday March 25, 2016 to see the equipment supplied courtesy of his government. The CS thanked the Chinese government for their continued collaboration with Kenya and more so in supporting higher education.
Speeches by TU-K leadership at the 2015 graduation ceremony revolved around a call to action to the graduates. In his speech, The University Chancellor, Dr Manu Chandaria advised the graduands to think critically and be innovative in order to solve societal problems such as poverty and unemployment.

“The skills and knowledge you have acquired through learning and training will best equip you to compete globally and enhance your capability in accomplishing various tasks in future,” he said.

Dr Chandaria reiterated that the university has the onerous duty of training personnel that can be the engine of the industrial and technological sectors of the country’s economy and the attainment of Vision 2030.

“TU-K offers relevant education approach by integrating industry, academia and community. This will enable the country resolve real issues and a trainee become industry compliant or self-employed,” he added.

The Cabinet Secretary for Education, Science and Technology Dr Fred Matiang’i also spoke of how TU-K occupies a strategic place in the realization of Vision 2030, the blueprint for the development of this country during the next decade and beyond.

“The realization of Vision 2030 depends on the quality of human capital from this and other universities. The Ministry of Education is looking up to the universities to provide the leadership in the development of inspired personnel who will drive the pillars of Vision 2030,” he said.

Dr Matiang’i added.

The recently appointed University Chairman Prof Godfrey Nguru informed the graduates that the knowledge and skills they had acquired has prepared them to meet the challenges of life outside TU-K.

“This knowledge should prepare you to serve our country diligently and responsibly as good citizens and as the pillars of this achievement,” he said.

Prof Nguru also requested the students to be good brand ambassadors for the institution. “We expect you to be the ambassadors of the University, that you market the University, and help rebrand it as the “University of Choice” for technical education in Kenya and internationally,” he added.

In his congratulatory message to the graduands, the VC Prof Francis Aduol urged the graduates to never tire in their quest for knowledge.

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In his congratulatory message to the graduands, the VC Prof Francis Aduol urged the graduates to never tire in their quest for knowledge.

“You are at the very beginning of your knowledge accumulation; there is still a lot of room for you to expand your knowledge. I look forward to receiving some of you back in our classrooms for more advanced learning,” he said.
The Technical University of Kenya Chancellor Dr Manilal Chandaria has reiterated that the University has the onerous duty of training personnel that can be the engine of the industrial and technological sectors of the country's economy.

Dr Chandaria who spoke during the third graduation ceremony of the University, added that technological discipline will put most education institutions in good state to play their role in contribution towards Vision 2030.

He congratulated graduands for their hard work and reminded them not to ignore other aspects of development in the country. “Education is the anchor of your future, it helps in nurturing you to be responsible citizens and remain relevant in this competitive world,” he said.

He challenged students to study diligently and utilize all available resources at the university, saying that their efforts will determine their destiny.

The Chancellor noted that to become a productive citizen, training is vital. He therefore challenged graduands to think critically and be innovative in order to solve societal problems such as poverty and unemployment.

“The skills and knowledge you have acquired through learning and training will best equip you to compete globally and enhance your capability in accomplishing various tasks in future,” he added.

He commended TU-K for offering a relevant education approach by integrating industry, academia and community. This he added, will enable the country resolve real issues and a trainee to become industry compliant or self-employed.

The Chancellor observed that the growth and stability of TU-K will depend on the efforts the staff are making towards excellence, adding that more can be achieved if members of the University community work with a shared dream, ambition, and goal.

Dr Chandaria advised graduands to be good ambassadors of the institution, remain responsible and productive citizens of the country. “You have travelled a long, and perhaps, a rough road. I know you know life is not fair, but you must learn to live with it. The real world is not a joyride. It won’t be for you. It has never been for anyone. But if you have a positive attitude, there will be people willing to give you a helping hand. By their support you will grow, but by the strength of your own character, you will succeed,” he added.
The French Government through the French Agency for Development (FAD) will soon extend a concessional loan facility to Kenya to support local universities’ expansion projects.

This project has been initiated and coordinated in partnership with the Ministry of Education, Science and Technology.

The French Ambassador to Kenya, Mr Rémi Maréchaux noted that the rapid expansion of local universities requires heavy capital investment to ensure that quality education and training is offered for Kenya to achieve its development goals.

The ambassador made the remarks when he delivered a well-attended public lecture at TU-K on Friday December 4, 2015 under the theme: “Bilateral Relations Between Kenya and France”.

Mr Maréchaux disclosed that TU-K Chancellor, Manu Chandaria, a while ago, challenged him to explain what France could do to improve capacity of Kenyan universities in training graduates with right industry skills.

The envoy said his government will continue issuing scholarships to Kenyan universities’ members of staff and students to pursue advanced studies in various disciplines in line with an agreement recently signed with the Ministry of Education, Science and Technology.

The partnership will make it possible for student exchange Programmes between Kenyan and French universities to give them international exposure. Scholars from both Kenya and France will also engage in joint research projects that would be funded by French and Kenyan governments to advance knowledge (through the PAMOJA Hubert Curien Partnership).

“The partnership between some of the best universities in France and Kenya will allow students from both countries to study in the host university for a short period, learn the culture, languages and overall gain global knowledge and skills,” said Maréchaux.

Mr Maréchaux said France was keen in working with Kenya in the fight against terrorism as fronted by Al Shabab and Islamic State which have in the recent past carried out deadly attacks against innocent civilians in the two countries.

He said France was open to investors especially in the agricultural sector where Kenya would be having a comparative advantage. The envoy further noted that French companies with a presence in Kenya had increased from 32 three years ago to over 70 in 2015.

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TU-K VC, Prof Francis Aduol thanked him for being the first-ever French ambassador to visit and deliver a public lecture at TU-K.
TU-K STUDENTS MOVE ARCHITECTURE LANDSCAPE A NOTCH HIGHER

U-K students are taking architecture modelling and landscaping practice a notch higher through innovative design techniques.

They are doing this by giving life to the typical 3D model impressions where they construct motion features including rivers, people, vehicles, birds, interior and exterior lighting.

The students who are subcontracted by registered Architectural companies, have so far been involved in construction of model impressions for the National Government, County Governments and private companies.

Under the business name, Polygon Model Makers, the team leader Mr Caleb Otieno, disclosed that the team brings in innovative ideas to give clients a better feel and impression of buildings and landscaping of projects that they intend to invest in.

“We are a team of young innovators who are putting our minds together to invest in home grown solutions, we are pushing to generate employment instead of seeking to join established companies for employment,” — Otieno.

Mr Otieno who is a third year Architecture student indicated that the decision to pull together resources was prompted by Kenyan businesses having to use international companies to do modelling work that could be done locally.

Other TU-K students who work with Mr Otieno include Mike Etale who is a finalist from the Journalism and Media Studies Department; he is in charge of media and publicity.

Responsible for business development is Susan Kivuti, a Sales and Marketing finalist. Another key member to the business operations is Geoffrey Abuki, an architecture finalist from the University of Nairobi.

Through their Facebook Account, the team has been approached by architecture firms and clients landing them big assignments among them; Central Bank of Kenya's extension and parking, Nandi County Assembly, West Pokot County Assembly and Apartment construction at Riverside Drive in Nairobi.

“Through references, we were called to do the models of the two counties currently under construction, the CBK's assignment is also one of our biggest and most exciting achievements,” said Abuki.

Their work was recently featured on NTV's N-Soko Property Show where they discussed market opportunities, and best practice in model making in the Architecture industry.
TU-K INNOVATIONS DRAW CROWDS AT VARSITIES EXPO

By JULIE BUNGEI & NETHAN NJENGA (TU-K Journalism students)

Multi-Purpose Bicycle
Exhibited by Aineah Omuyonga

The Multi-purpose Bicycle is designed to charge mobile phones and at the same time mill dry maize. The mobile phone charging compartment uses a dynamo that generates electromotive force (EMF) to charge a phone. Human effort through cycling produces mechanical energy that mills the maize. Aineah Omuyonga, the innovator said the multipurpose bicycle is suitable for farmers living in remote areas with no access to electricity. “Bicycle use as mode of transport can therefore be used for several purposes and equally for body exercise,” added Omuyonga.

Banana Peel Vinegar
Exhibited by Margret Jepkosgei

Production of vinegar from ripe banana peels is done through extraction of ingredients whereby it is boiled, processed and cooled. Jepkosgei, the innovator indicated that the homemade vinegar is cheap and environmentally friendly in comparison to industrially manufactured vinegar.

MATIANG’I CALLS FOR INCOME-GENERATING VENTURES FOR VARSITIES

Education Cabinet Secretary Dr Fred Matiang’i has asked universities to venture into income generating activities to ease financial challenges facing the institutions.

In a speech read by the Commission for University Education Chairman, Prof Henry Thairu, during the opening ceremony of the 14th Kenyan Universities Exhibition held at Flamingo Beach Resort & Spa in Mombasa on March 16, Dr Matiang’i noted that local and international partnerships are among innovative ways of accessing external funding.

Matiang’i asked the Kenya Universities and Colleges Central Placement Service (KUCCPS) to place students to courses of their choice.

The CS indicated that the Engineers Board of Kenya (EBK) is working with various stakeholders to ensure affected institutions are accredited. Speaking at the same event, the Mombasa County Education Executive Mr Tendai Mtana asked KUCCPS to ensure that secondary school students who meet the minimum university entry requirements are admitted to the courses they applied for.

Technical University of Kenya VC, Prof Francis Aduol at the same time praised TU-K students for exhibiting robust innovative ideas.

Mtana asked KUCCPS to ensure that secondary school students who meet the minimum university entry requirements are admitted to the courses they applied for.

Technological University exhibited eight top-selected innovative projects among them; harnessing ICT, engineering and biochemistry technologies.

“Businesses start with young people like you. The innovations are brilliant, they should be refined to generate money,” said Prof Aduol.

He added that students who excel must leave the university with tangible products that can be commercialised.

He asked heads of various divisions and faculties to link students with various industry players and identify market.

During the event, public and private universities exhibited various innovations as well courses offered in the institutions.

Among the guests who attended the exhibition were Commission for University Education Chief Executive Officer (CEO) Prof David Some, university vice-chancellors and various stakeholders from the education sector.
TU-K Innovations Draw Crowds at Varsities Expo

**Vertical Farming Technology**
*Exhibited by Elizabeth Achieng*

Vertical Farming Technology (VFT) is a vegetables tube garden that can be used by urban dwellers with limited space. The farming technology uses a solar panel-powered system to pump water up the tubes. It is remotely controlled using a mobile phone application. The technology can also be mobilized in dry areas due to its minimal water use.

**3G/4G Digital Signage Display**
*Exhibited by Fredrick Kamau*

3G/4G Digital Signage Display is a remotely controlled system where content can be downloaded and uploaded remotely. The signage can be displayed in public places including billboards, PSVs, malls, supermarkets, hospitals etc. “Once the display material is produced, it is loaded to several display boards across target points at once. This is an upgrade from the traditional signage system where printed posters and billboards are done manually,” said Kamau.

**AMIGOS**
*Exhibited by Fredrick Kamau*

AMIGOS is an Android-enabled application that allows sharing of several types of files among them PDF, Word documents. To use the application, users should be connected to the Internet. Multimedia files, pictures and audio-visuals running into 500GB are shared with ease. The technology uses a mobile phone number as an account unlike other applications that restrict users to log-in with their email addresses. “AMIGOS is an application that works like WhatsApp but with more features that are user-friendly that cannot be transferred using WhatsApp,” said Fredrick Kamau, who is the project developer. Companies and other interested users who are interested in advertising their products and services are given a platform on the mobile application where they can book for space. AMIGOS is safe and secure from virus attacks since it is fitted with virus detectors and scanners.

**AMS-Enabled Water Level Detection**
*Exhibited by Peter Njoroge*

The SMS-enabled water level detection application detects water level in a tank and other large liquid containers. The system uses signals from ultrasonic sensors and GSM module.
A Technical University of Kenya professor is leading a study that has demonstrated that ingredients found in Kenyan purple tea could be used as a remedial therapeutic intervention to reduce toxic post-treatment reactions of medication used in treating sleeping sickness.

Isaac A. Orina, an Associate Professor at the Department of Pharmaceutical Sciences and Technology, alongside other scholars from Egerton University and other research institutions has demonstrated that the severity and fatalities resulting from neurotoxic side effects of a sleeping sickness medication can be reduced once the complete findings of the study are released.

Sleeping Sickness is also known as Human African Trypanosomiasis (HAT) commonly found in Africa. Toxic side effects and related complications of Melarsoprol, which is the only drug available for treating late stage sleeping sickness caused by T. brucei rhodesiense, kills five per cent of the treated patients.

The study adopted Swiss white mice to assess the use of the purple tea components in blocking the occurrence of PTRE. The mice group that was treated with the two components had a boost in brain antioxidant capacity. These findings demonstrate that therapeutic intervention with the two purple tea components can be used in an experimental mouse model to ameliorate PTRE associated with cerebral HAT. As a result, several anti-inflammatory agents are being evaluated with the aim of ameliorating the severity of PTRE complication.

Other co-researchers are Khalid Rashid, Francis N. Wachira and James N. Nyariki. Prof Orina was the Principal Investigator in these studies recently published in international peer reviewed journals (Nutritional Neuroscience and Parasitology International).

The crucial components extracted from Purple Tea were anthocyanins (purple water soluble pigments found in the purple tea) and catechins. In addition, Co-enzyme Q10, a catalyst component aiding in vital biochemical reactions in the cell, was also shown to boost antioxidant and neuroprotective effects on mice brain cells; nullifying the neurotoxic effects of melarsoprol after treatment of late stage sleeping sickness.

"Melarsoprol drug induces an extremely severe post treatment encephalopathy in up to ten percent of treated patients, half of who die from this complication," argues the study published in reputable international journals.

Treatment of late stage sleeping sickness caused by T. b. rhodesiense currently relies on Melarsoprol, a highly toxic drug that can be invariably fatal. Professor Isaac Orina’s research could result in safe administration and use of this drug, saving many lives.

The components extracted from the purple tea were obtained from the Tea Research Foundation of Kenya, Timbilil Estate in Kericho. The extraction of anthocyanins and catechins relied on very elaborate and advanced chemical characterization employing cutting edge technologies in phytochemistry.

The project brought together four research institutions; Egerton University, the Tea Research Foundation and Trypanosomiasis Research Centre and the Technical University of Kenya.
Entrepreneurship and innovation are key ingredients in any developing nation's growth, Seven Seas Technologies Company CEO Mr Mike Macharia told university students during the First Innovator-Investor Forum that was held at Technical University of Kenya.

The CEO emphasised that global trends are rapidly shifting what human beings and the environment demands.

“It is up to the young minds particularly university students and graduates to harness technology to innovate solutions for individuals, companies, institutions among others,” said Macharia.

Mr Macharia who is also the chairperson of ICT Outsourcing Authority and a member of the World economic forum for young leaders told participants that many young people who have taken a chance on innovation, and self-employment are doing extremely well while providing solutions to the world.

The Seven Seas CEO narrated how he too begun his entrepreneurial journey at the age of 25 by developing a technology solution for Rwanda International Airlines and now has a business that operates in over 11 countries globally.

He challenged the students to think innovation while still young and to actively search for every available opportunity, giving an example of M-Pesa which is a homegrown innovation now spreading across the globe.

“One should have passion for whatever he or she intends to do and not solely focus on making profits from the get go. Think about problems you need to solve and don’t let other people think for you, learn to come up with new ideas and create new things that have not been done before, things that will create job opportunities, wealth and improve the economy,” added the 45 year old CEO.


The investor forum is organised by TU-K's Schools of Mechanical and Process Engineering (SMPE), Infrastructure and Resource Engineering (SIRE) and Computing and Information Technologies (SCIT).

“Innovation distinguishes between a leader and a follower.”
- Steve Jobs
The Technical University of Kenya hosted its third international conference in Nairobi. The conference objective was to gather crucial academics, policy makers, and practitioners to examine the latest developments in science, technology, innovation, and related research and how these can be translated into effective development activities.

This year’s theme was: ‘Technologies as Drivers for Development.’

Speaking during the opening ceremony, TU-K Deputy Vice Chancellor (Academic, Research and Students), Prof Paul Shiundu said the university was committed to innovation and modern training.

“TU-K’s motto speaks of education and training for the real world,” this is testament of our desire to take our students through ways in which to innovate and come up with solutions to the world’s problems,” he said.

“Science can be transformed into effective development activities and thus a need to establish lasting future collaborations in science, technology and innovation so as to enable growth of African economies,” he added.

The keynote speaker John Mugabe, a Professor of Science and Innovation Policy at the University of Pretoria also spoke on the need to spur African growth with technological innovations.

“Technological innovation, if well governed, has potential to enlarge human capabilities and transform the wellbeing of millions. We need to be more creative in technological change and innovations, we need more discoveries.” He said.

Prof Mugabe who has worked in various African countries for the past 20 years in African technology, also spoke of the need to do further research on the link between technological innovations and development.

“The Africa rising narrative is growth based on development, there is need for new policy approaches and institutional arrangements. In the last 15 years, Africa has not risen economically as it has been overtaken in innovations and production by the Asian courtiers like china, Japan

1. Prof Reuben Marwanga, Kenya National Innovation Agency Chairman makes a presentation during the conference

2. Shlomit Ofer from College of Education and Technology, Israel (left) follows proceedings during the conference

3. Prof John Mugabe from the University of Pretoria, South Africa makes his presentation

4. A participant makes a point during the conference

5. A group picture of participants drawn from local and international institutions.
and Korea,” he added.

Prof Mugabe blamed Africa’s slow uptake of innovation on policies by the funders such as International Monetary Fund and World Bank who prefer to invest in education than innovation.

“There is poor policing by lenders on innovation and on many other factors including; weak links between nations, under investments in health science especially in findings for HIV, innovation gap between knowledge production and application, political leadership and infrastructure, resurgence of academies of science and underfunding by not only the donors but by African governments themselves” he said.

Prof Mugabe challenged TU-K technologists and academia to engage in talks with industry operatives that can help achieve innovation success.

“Institutions such as TU-K should engage local companies to start innovative developments at the local level, TU-K should also engage the political class to assist in funding technologists, and visit embassies like the Chinese Embassy to engage with their engineers who are deployed by their governments” he added.

The three-day conference witnessed the presentation over 60 papers from various academics and professionals from across the globe. The presentations were mainly focused on the conference theme of technologies as drivers for development.

“TU-K should engage the political class to assist in funding technologists”
— Prof John Mugabe

BEST FARMING PRACTICES NOW ON YOUR MOBILE PHONE

Farmers across the globe can instantly tell productivity of their pieces of land, connect and share knowledge with agricultural producers using a mobile application that is easily downloadable on a smart phone.

LandPKS is one of a kind technology developed by African Technology Policy Studies Network (ATPS) which allows users to access, share, use and interpret fundamental farming knowledge.

According to ATPS Director Dr Nicholas Ozor, the application has a massive global network of open-source databases and computer simulation models that anyone with mobile phone and wireless or cellular data connection can access.

Speaking when he presented the project during the Technical University of Kenya (TU-K) Third International Conference on Innovative Technologies for Development at Laico Regency Hotel in Nairobi, Ozor disclosed the application contains vast traditions of maximising land productivity while protecting resources for future generations.

The application suite was tested as a pilot in Kenya and Namibia and was released for global consumption in May last year.

The application can be used to determine the locality soil-type, climate calendar, best farming produce suitable for an area, farming methodologies, latest farming technologies among other key farming information.

“It captures global knowledge and information relevant to the unique potential areas allowing farmers to access farming knowledge that best suits their land area as well as best agriculture practices across the region and the globe,” noted Ozor.

LandPKS Technology suite is connected to cloud-based analytics and user-accessible cloud storage allowing sharing and retrieval of information.

Ozor indicated that the platform is designed to support increased agricultural productivity, sustainability and resilience – for increased food security, land use planning, adaptation to climate change impacts, biodiversity conservation, erosion risk assessment and restoration.

LandPKS automatically inputs users location and site data using server geospatial scheming, data simulation models, and database output systems to users mobile application.

It generates accurate, robust and timely information and knowledge of land potential supporting effective decision making on agriculture development and land management strategies.
1, 2, 3 Graduands follow proceedings.
4. Bachelor of Technology in Biotechnology graduand Ms. Victoria Mwaeni who was the best student, class of 2015 speak during the ceremony
5. Graduates celebrate after conferment of various degrees
6. TU-K Drama Club members performed a coral verse entitled “Court Room” during the graduation ceremony
7. Music students perform a Ramogi dance
8. Students band and choir in a dance with TU-K Chairman Prof Godfrey Nguru and VC Prof Francis Aduol during the graduation ceremony
9. Technical University of Kenya leadership led by the Chancellor Dr Manu Chandaria.
10. The Academic Procession
The Department of Physics and Space Physics has received science equipment from the African Development Bank (ADB) that will be used in training and research.

The equipment were presented by the Ministry of Education, Science and Technology and have already been installed at the department’s modern laboratory.

According to Dr Patrick Karimi, Chairman, Department of Physics and Space Science, the equipment will be essential in the understanding of various areas in physics and space research.

The machines which include Bipolar Field Effect Transistors, Logic Gate Training Kit and Photovoltaic Kits which will be used in electronic technology for training purposes while Sputtering machines like Spectroscopy and Newton’s Ring experiment kits will be used in both research and trainings.

“We are lucky to be one of the beneficiaries of such high-tech equipment in our university,” said Department Acting Director Prof Jackson Odote.

Prof Odote added that TU-K will be abreast in terms of research and training and the university is in better position to produce graduates with market skills that will help in innovations and solving emerging challenges in the Physics and Space sciences fields.

Dr Karimi on his part said, with the new equipment in our laboratories our staff are now motivated and ready to teach comprehensively and will ensure our students get the best modern technological skills.

Inter-Tech Batinorm Company Limited was contracted by the Ministry to supply the equipment that includes installation, operation and testing as well as demonstrating to the staff and students on how to operate the equipment.

“We are lucky to be one of the beneficiaries of such high-tech equipment in our university,” — said Acting Director of School, Prof Jackson Odote.
Konza Techno City boss has challenged university graduates and continuing students to come up with innovative projects particularly on technology-driven ventures indicating the city is best placed to incubate and grow ideas to solve local and international challenges.

Speaking during an open lecture at Technical University of Kenya’s Main hall recently, Konza CEO Eng. John Tanui said the city will be Africa’s biggest technology domain in terms of modern technology and facilities.

“There is a huge need to bring in both the academia and students with fresh minds and ideas from local universities to assist in areas of research, science and technology, adding that these fresh ideas can easily be transformed into serious business solutions and start ups,” said Tanui.

The project which is estimated to cost 500 billion dollars will cover 5,000 hectares of land. He said that the construction of the mega city will be done in four phases and the first phase is on going.

Tanui indicated that Techno City Management is in talks with TU-K to come up with a memorandum that will see university graduates and ongoing students get work and internship opportunities in the ongoing construction.

“Over 17,000 workers will be required in the construction of the city; we will offer 400 chances to University students targeting Engineering and Technology every year to train and work with them,” said Tanui.

The City envisaged to accommodate population of 200,000 people once completed will include among others; office blocks, banks, data centres recreational grounds, mega shopping malls, first class hotels, swimming pools, schools, accommodation flats and a university to carry out research.

“Several multinational companies have since acquired space at the City’s ground are expected to put up their companies,” said Tanui.

Mr. Tanui who served in the past as TU-K Council Vice-Chairman, was accompanied by his Director - Business Development, David Mugambi, Jane Chemutai - PR and Communications Manager, Lucas Omollo –Smart City Solutions and IT Manager.
A United States-based aviation training and solutions company has donated an Aviation Simulator and equipment to TU-K that will help engage aerospace and aviation engineering students in advanced interaction with commercial aircrafts.

Speaking during the handover ceremony, Aerosim Technologies Commercial Director Simon Newcombe said that the simulator is a software technology built with the typical operation of an aircraft in mind; encompassing of 3D impressions, designed with sound, trouble shooting and diagnosis, reacting the same way an airplane would.

The simulator system is a replica of commercial aircrafts Airbus A 320 and Boeing 737 NG. It is a hands-on interphase technology effectively immersing students into the learning process.

“The Programme gives aviation students an upper hand in understanding various fields of focus and gets them prepared in their career,” said Newcombe.

Aerosim Technologies representatives noted that the simulator Programme is cost effective giving student’s visual understanding of aircrafts. Typically, students would not easily access a commercial plane for regular classwork.

“University instructors have already been trained on various components of the Programme. However, TU-K is expected to develop a curriculum to suit the teaching Programme,” added Michael Romain, Aerosim’s Customer Support Manager.

Handing over and commissioning of the equipment is part of a Sh800 million fund by Africa Development Bank (ADB) to elevate relevance and quality of higher education in Kenya.

“The university made a bid to AFD and the commissioning is part of the benefits to ensure that students get hands-on knowledge and match market dynamics,” said Prof Festus Ondore, who is Chairman, Department of Aerospace and Aviation Engineering – TU-K.

The Aerosim Technologies team met University VC Prof Francis Aduol where they handed over the installation documentation. During the handover, Newcombe disclosed that TU-K is the first in Africa to get the Aerosim Technologies Aviation Simulator.
Aerosim Technologies representatives noted that the simulator Programme is cost effective giving student's visual

TUT’s Institute for Advanced Tooling Operations Manager, majority of African plastic and parts manufacturing industries are still dependent on injection moulding technologies from India, China or from European.

“This is the key ingredient in driving Kenya’s economy to be independent of overseas manufactures of injection mould tool,” said Dr Eric Ogur, the TU-K Director of the Centre for Engineering Innovation and Production.

He added that the move elevates economy to self-sufficiency in production chain. “If for instance a local production company needs to make or change shape of their plastic packaging, they are forced to make and order of an injection moulding tool from abroad,” said Ogur. Mr Makhubela conducted the training at TU-K alongside his counterpart Irene Modipa.

Technology Innovation Agency from South Africa sponsored the training at TU-K to the tune of Sh11.5 million that ran for four weeks, with the initial two-week training. Other trainings are also scheduled for a later in 2016.

TU-K has already acquired 41 state-of-the-art CNC machines that demand highly skilled operators. The machines are used in manufacturing injection moulds among other tools.

The injection moulding process is extremely delicate and equally uses expensive machines that demand experienced manpower.

According to Dr Ogur, TU-K has massive machinery that meets international standard but lack operation personnel leaving a gap in machine’s optimum utilisation.

“The partnership and training with various local and international universities, research institutes and experienced skilled manpower will put us in the world map,” Dr Ogur added.
The Technical University of Kenya (TU-K) has introduced Masters Programmes carefully developed to strengthen technological innovations tuned to current local and international market demands.

With rapid technological growth in Kenya, innovation is key in building home grown technologies and solutions to ensure socio-economical growth. Academic Registrar Dr Hesbon Nyagowa said the University has designed the Master's Programmes to aptly suit the market demands. He noted that the move is in tune with the Government's bid to strengthen technical-based learning and research institutions.

“We are shifting from the typical Masters Programmes particularly in science-oriented fields to ensure the university achieves its technological targets in practical, multi-disciplinary approach to teaching and learning,” said Dr Nyagowa.

According to the Registrar, seven of the Master's courses are already running in three fields, i.e., Engineering, Mathematics and in Music Technology. “The Master's Programmes include Master of Technology (Mechanical Engineering), Master of Science in Statistics, Master of Science in Mathematics and Master of Science in Applied Statistics,” Nyagowa disclosed.

In the field of Music are Master of Music Arts in Composition, Master of Music in Music Education, Master of Music Degree in African Music Studies and Master of Music Arts in Performance.

“The Engineering Programme rolled out in September last year with six students, Master of Music Programmes also began last year in November,” said Nyagowa during an interview with TUKNEWS adding that already six students had applied for the Mathematics Masters Programme that began in January 2016.

He noted that the university has sufficient professors and supervisors to take the students through the two-year Masters Programmes.

Nyagowa indicated that TU-K has 87 PhD holders and 30 Professors and Assistant Professors who will comfortably handle the supervision and classwork.

The university is preparing another 16 masters Programmes in various fields of specialisation pending the university Senate approval.

“The 16 Programmes have passed through the Deans’ committee and awaiting the Senate approval and will be launched in due course,” said Nyagowa.

He noted that the university is working to ensure that all the 67 undergraduate Programmes currently offered equally have Masters Programmes. Undergraduate Programmes in the diploma courses offered at the university including Pharmaceutical Technology, Medical Records, Actuarial Science among others are also being developed.
TU-K MOVES UP IN GLOBAL RANKINGS

The Technical University of Kenya moved four positions up in the latest Webometrics University rankings emerging position 8 among 67 Kenyan Universities. TU-K was ranked at position 199 in Africa out of 1417 universities.

The “Webometrics Ranking of World Universities” is an initiative of the Cybermetrics Lab to promote scientific research; improve progress of the scientific and technological level.

The ranking is done based on certain composite indicators. These are:
1. Visibility: which amounts to 50% of the final mark, is the total number of unique external links received by a site.
2. Activity: covers the other 50% and is broken down further into 3 categories;
3. Presence: Which is the total number of web pages, according to Google, excluding pdf files
4. Openness: This is the level of knowledge transfer. The value refers to the total number of pdf files according to Google.

Excellence-Top 10% of the most cited papers by discipline for the five year period 2011-2015. It is a measure of high quality output of research institutions.

The Ranking Web of World Universities or Webometrics Ranking (WR) has been done since 2004 by the Cybermetrics Lab, a research group of the Spanish National Research Council (CSIC).

The rankings are intended to motivate both institutions and scholars to have a web presence that accurately reflects their activities.

For further information on the rankings log on to http://www.webometrics.info/en/Africa/Kenya.

DON APPOINTED TO SIT IN THE ADVISORY BOARD OF PROHIBITION OF CHEMICAL WEAPONS OUTFIT

Dr Austin Aluoch, the Chairman of the Department of Chemical Science and Technology has been appointed as an inaugural member of the Advisory Board on Education and Outreach for the Organisation for the Prohibition of Chemical Weapons (OPCW)

The Conference of States Parties (CSP), at its 20th session held in December 2015 at OPCW headquarters at the Hague, approved the establishment of ABEO. The Board is expected to provide specialist advice to the Director-General, policy-making organs, and to CSP in areas of education and outreach relevant to the Organisation’s mandate. The launch of the ABEO marks a significant step forward in the organisation’s education and outreach efforts.

Dr Aluoch’s appointment is effective 1st January 2016 in accordance with the terms of reference of the Advisory Board on Education and Outreach (C-20/DEC.9, dated 3 December 2015). The Executive Council shall review the operation of the Advisory Board on Education and Outreach after three years. This appointment is based on his expertise in the field of education and outreach. The first meeting of the Board is scheduled to take place at the OPCW Headquarters in The Hague from 28-29 April 2016.

“There’s a way to do it better - find it.”
- Thomas Edison
WHAT SHOULD WE BE TEACHING THE NEXT GENERATION OF COMPUTER SCIENTISTS?

A
technology changes rapidly, how can the academy respond to the challenge of educating for an unwritten future? John Gilbey went to Silicon Valley to find out.

It is commencement weekend at Stanford University and the sidewalks of the campus are sizzling in the full heat of a beautiful June afternoon. The lawns, mown with a precision that would shame many golf courses, are playing host to huge white marquees in which the day’s degree-awarding ceremonies are just ending. The campus has changed since my last visit, and newly sprouted buildings confuse my memory of the route to the computer science department. But by using the concrete beacon of the Hoover Tower as a guide, I manage to find the William Gates building on only my second attempt.

I’m in Silicon Valley to talk to some key local figures about the future of how we teach computer science, a topic currently high on the agenda in the UK.

In the US, graduates from roughly analogous subjects consistently account for a lower proportion of the total graduate cohort: 2.6 per cent in 2011-12, the most recent year for which figures are available. But that still amounted to nearly 50,000 students.

Clearly, with numbers this big, we want to make sure we introduce students to materials and ways of thinking that will be both immediately useful in employment and a good foundation for future career development. But the Higher Education Funding Council for England is concerned enough about the extent to which this is happening that it has commissioned a major review to chart a way forward.

Sir Nigel Shadbolt, notes that computer science has consistently had the highest rate of unemployed graduates of any subject in the UK. Shadbolt, who is professor of computer science and principal of Jesus College, Oxford, notes that there are “concerns from industry about the skills, agility and work-readiness” of computer science graduates. Other concerns include “the proportion of undergraduate computer science students who progress into low-paid or non-graduate level employment” and the “reliance our computer science departments have on international recruitment to fill their labs and postgraduate courses”.

It is essential to acknowledge the sheer importance of computer science as a profession and, hence, of the way universities prepare people to enter it. Stanford is at the very heart of Silicon Valley culture, and is a top global destination for those seeking a career in the computer industry. Huge developments have spun out around the world in the years since the university became one of the founding sites of the ARPANET - the technical precursor to the internet. From being an almost niche area of technical, scientific and business interest, computing has escaped from the concrete citadels of the mainframe computer to become almost universally networked. It now forms a vital core of connectivity to the human environment - as innately mobile as the population itself.

Alex Aiken, chair of Stanford’s computer science department, describes the computing revolution as “a social experiment on a worldwide scale. These kinds of changes don’t come along very often. The printing press changed the world and we are going through a similar kind of transformation now - that is very, very clear. The implications are not entirely understood and a lot is up for grabs.”

Aiken is sure that demand for computer scientists and technology workers. “For a long time we wondered why more people didn’t major in computer science,” Aiken reflects. “Everyone in the field believed it was the future and that it represented an important way of thinking. Now the world believes us, and we have an overwhelming number of students.”

The Kavli Institute for Particle Astrophysics and Cosmology, director, Tom Abel, explains why his teams are such heavy users of supercomputers and innovative software: “For us in physics, the computer is the laboratory. We can’t take a neutron star and throw it at another and look how it goes,” he says. “Even if we could, we wouldn’t want to make a bunch of black holes on Earth and experiment with them. But our supercomputer is phenomenal. We can try out many things [on it]. On the data side, these types of experiments have moved from [involving] a team of, say, five people to a team of 50. Of course, with the Large Hadron Collider [at Cern] you have more like 5,000 people involved. There are many projects moving in that direction.

“It ends up being a lot of equations, and we need them to be implemented in a way that [utilises] tens of thousands of processors simultaneously - so there is a lot of skill in the way you cobble together and leverage each other’s expertise.”
Higher Education Academy report proposes a raft of changes to help improve reward and recognition of good teaching at universities.

How do you stop teaching-focused staff from being seen as second-class academics?

With promotion and prestige still overwhelmingly linked to a scholar’s research record, and particularly the ability to win funding, many within the academy might view the task as near impossible. However, various initiatives – including teaching qualifications, new promotion pathways linked to teaching excellence and institutional prizes – have arguably had some impact, and there are high hopes for the new teaching excellence framework.

But academics who focus on teaching students are still widely viewed as “second class” at elite universities, says a report by the Higher Education Academy published on 15 January.

In some cases, the status of teaching staff is lower still, with some staff referring to them as “not real academics”, according to the report, which draws on interviews with 10 pro vice-chancellors and 16 heads of department at Russell Group universities.

What can be done to rectify this situation? Getting rid of the “unhelpful” job titles associated with teaching staff – not least the “teaching fellow” tag itself – would be a start, the report says.

“Teaching fellow” carries a kind-of-packhorse ‘covering somebody else’s research leave’ connotation, explains one head of department.

Another states that the “teaching-only” tag alone “creates quite a lot of grumpiness” in the department, given the “perceived lack of respect”.

Dilly Fung, director of the University College London Centre for Advancing Learning and Teaching, who co-authored the report with Claire Gordon of the Learning and Teaching, who co-authored the Higher Education Academy report, said that teaching-only staff in some universities, are not even classified as academics. Instead these educators are deemed to be part of “professional services”.

This classification means that teaching-only staff “have no promotion prospects whatsoever”, according to one head of department quoted in the report.

“There is no ‘senior’ or anything like that – you’re just a teaching fellow,” they are quoted as saying, adding that “in professional services you can’t be promoted”.

Some universities already have more specialised teaching roles with proper promotion prospects, including professorships with a teaching focus.

But many staff interviewed for the HEA report are ambivalent about these posts.

“I’m quite clear that no one’s going to get promoted, certainly to professorial level and possibly not even [to the grade below], for good teaching,” says one pro vice-chancellor, adding that an academic needed to show an outstanding contribution to “education leadership”, such as creating a new course or being a world authority on pedagogy, to gain promotion. One respondent recalls that a lecturer in their department who ran a “spectacularly successful master’s course, bringing in well over £3 million a year” went for a promotion but was turned down, while others with good research and enterprise records were not.

“The one who didn’t get it was by far and away the most important person...because it’s not just the income, it’s the fact that that income represents, God knows how many individuals, who come to this place to be damned impressed and leave here lifelong members of the [institutional] family,” the head of department says.

To combat this bias against teaching-focused staff, promotion panels should not consist only of senior academics likely to have risen owing to their research prowess, the report says. Instead, more professional services staff and potentially senior management focused on education should play a part in the decisions.

“There have been changes to promotion criteria to address the lack of recognition for outstanding teaching, but the change in culture has not happened as quickly,” said Dr Fung.

However, recruiting more staff on the grounds of teaching prowess just didn’t make sense to many research-intensive institutions given their strategies, another pro vice-chancellor admits in the report.

“If you want to get from, say, 800 staff in the research excellence framework to 1,000, employing staff who you can’t submit is not very logical really,” the pro vice-chancellor is quoted as saying.

Improving the equivalence of pay, recognition and prestige for teaching staff is vital to keeping some of the best employees in this realm, and in ensuring that teaching quality stays high, said Dr Fung.
The move by the French government to digitise qualifications data could end the need to show degree certificates. The French education minister has announced plans to create a unique digital database for degree qualifications, which aims to simplify the task of verifying job candidates’ academic ability to employers and to save a significant amount of government money.

Najat Vallaud-Belkacem, the minister of national education, higher education and research, made the announcement at Bett 2016, the international trade show for digital technology in education, which she attended as part of an official visit to London.

Innovation should not “end on the ministry’s doorstep”, Ms Vallaud-Belkacem said. “We’re continuing to digitally modernise the way the ministry...is run. As such, we’re launching a digital service unique in Europe: one which certifies any French...higher education qualification, and this will be up and running at some point in 2016.”

The digital certification service will supply proof for all state-issued national qualifications, which confer degree status, from the past 15 years. Degree holders will be able to pass on their qualifications data to employers in secure and authentic digital form.

Currently, an official degree certificate on watermarked paper can be issued to its holder only once; after that, only proof of the qualification can be obtained. Every year, 80,000 requests for proof of qualifications are made; handling them costs French authorities a great deal of time and money.

At the same time, the use of proofs of qualification during job interviews is not thought to be reliable. A communiqué released alongside Ms Vallaud-Belkacem’s announcement said that a private study carried out on behalf of recruitment agencies had shown that 30 per cent of degree data on CVs was either inaccurate or misleading.

By guaranteeing the authenticity of the degrees, it is hoped that the new service will combat fraud during job recruitment. It will also automate requests made to the authorities, saving time and money.

Initially, it is hoped that the database will hold data on 500,000 higher education qualifications and 1.6 million from secondary level issued at the end of the 2016-17 academic year. The service will then be rolled out to cover the past decade and a half, with 25 million qualifications covered.
A collective bargaining agreement has been signed between the Council of the Technical University of Kenya (TU-K) and Kenya Universities Staff Union (KUSU), TU-K Chapter.

The CBA signed caters for non-teaching staff from grades V-XIV in matters of local allowances excluding basic salaries and house allowances.

The agreement included provisions for loan facilities, agency fees, pension schemes, medical benefits, mileage allowance, house-to-office allowance, leave travelling allowance, subsistence allowance, passage and baggage allowance, and demise in service.

While signing the CBA agreement, the Vice-Chancellor, Professor Francis Aduol, called on the union officials to harmoniously work with the Council to improve the welfare of staff rather than make unrealistic demands. He called for patience while the Management tries to improve the terms of service for all staff citing that the Management has had financial challenges in the past.

Under leave allowance, members of staff in grades V-XIV will now earn between Sh4,000 and Sh16,000. With regard to house to office allowance, members of staff between grades V and X will now earn Sh10,000 per month, while those in grade XI to XIV will earn Sh14,000.

Subsistence allowances for grades V-XIV will now range between Sh4,000 and Sh9,500 per day.

Under passage and baggage allowance, staff members of staff in grades V - XIV will now earn between Sh7,200 and Sh15,950 per year. With regard to demise in service, families will now receive between Sh60,000 and Sh110,000 depending on job grade.

The signing marked a milestone in the University’s relationship with the Union. Newly elected union members were congratulated on taking up their various offices and encouraged to relate harmoniously with the Management.

The new Union officials are: Chairperson- Custine Wanza Kioko, Vice Chairperson- Fredrick A. Oloo, Secretary- Engineer Patrick Ogutu, Treasurer- Evelyn Getuba, Assistant Treasurer- Rispah M. Omulupi, Organisation Secretary- David O. Sirimani, Trustee- Christopher Owino.

### Subsistence Allowance (in Kenya)

<table>
<thead>
<tr>
<th>Grade</th>
<th>Rate per day (KSh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>XIV</td>
<td>9,500</td>
</tr>
<tr>
<td>XIII</td>
<td>8,500</td>
</tr>
<tr>
<td>XII</td>
<td>8,000</td>
</tr>
<tr>
<td>XI</td>
<td>7,000</td>
</tr>
<tr>
<td>X</td>
<td>6,500</td>
</tr>
<tr>
<td>IX</td>
<td>6,000</td>
</tr>
<tr>
<td>VIII</td>
<td>5,500</td>
</tr>
<tr>
<td>VII</td>
<td>5,000</td>
</tr>
<tr>
<td>VI</td>
<td>4,500</td>
</tr>
<tr>
<td>V</td>
<td>4,000</td>
</tr>
</tbody>
</table>

### Trip Allowance

½ rate of subsistence allowance as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Rte per day (KSh)</th>
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</thead>
<tbody>
<tr>
<td>XIV</td>
<td>4,750</td>
</tr>
<tr>
<td>XIII</td>
<td>4,250</td>
</tr>
<tr>
<td>XII</td>
<td>4,000</td>
</tr>
<tr>
<td>XI</td>
<td>3,250</td>
</tr>
<tr>
<td>X</td>
<td>3,000</td>
</tr>
<tr>
<td>IX</td>
<td>2,750</td>
</tr>
<tr>
<td>VIII</td>
<td>2,500</td>
</tr>
<tr>
<td>VII</td>
<td>2,250</td>
</tr>
<tr>
<td>VI</td>
<td>2,000</td>
</tr>
<tr>
<td>V</td>
<td>1,750</td>
</tr>
</tbody>
</table>
TU-K’S VERTICAL FARMING TECHNOLOGY CAUSES A STIR

By JULIE BUNGEL
4th Year Student, Department of Journalism & Media Studies

Vertical Farming Technology (VFT), one of TU-K innovations being exhibited at the on-going Universities Exhibition in Mombasa, has attracted huge interest from among expo goers. According to Elizabeth Achieng who innovated VFT, the technology harnesses minimum space and can be used in planting a variety of vegetables. “The technology is best suited to urban dwellers, who have little or in most cases no space to plant vegetables for domestic consumption,” said Achieng. “We are conducting research to establish this model’s economic viability for large-scale production,” explained Achieng. The Technical University of Kenya trains students in skills that seek to offer solutions to problems facing society.

The 14th Exhibition by Kenya Universities at Flamingo Beach and Resort and Spa attracted various education stakeholders. It is being organised and hosted by the Commission for University Education. The three-day exhibition that started on March 17, 2016 is themed ‘Celebrating University Expansion through Diversity and Integration’

Achieng, a student in the Department of Governance and Public Policy, is raring to provide socio-economical solutions including mitigating food insecurity in the region. Jack Nzomo one of Mombasa residents said the innovation, if adopted, would ease food shortage a phenomenon that is recurrent in urban areas especially due to limited space.

Achieng is receiving personalized Electrical and Power Engineering tuition to bolster her innovative ideas. “I was inspired by my brother who has studied electronic engineering. This has given me an upper hand in putting up the solar system that I used for my innovation,” she noted. Solar Energy is used to power a water pump pushing water up through pipes that irrigate crops in this system. The drip irrigation system is therefore easier and cheaper compared to the manual irrigation system.

The organic farming technique will be easily replicated in the dry areas as the fertile soil replenishes after three months of harvest.
The Technical University of Kenya Council Chairman Prof Godfrey Nguru has challenged professors in the university to remain steadfast and visionary in the execution of their duties.

Speaking during an academic workshop for professors held in February in Nakuru, Prof Nguru emphasised the need for professors to provide exemplary leadership since they are the most senior members of the university.

“You represent the best and the brightest. You need to own TU-K, identify with and be committed to its growth, vision and mission. That is why we are having this conference to chart the future of TU-K together,” said Prof Nguru.

The Chairman said the faculty should raise the profile of the University and act like role models by molding students’ careers and characters, guiding their research projects, sourcing scholarships, among other assignments.

Prof Nguru asked academics to be creative and mobilise resources both locally and internationally through research, innovations among others. “Young lecturers should see that you can make more money from scholarship than moonlighting. Lead in production, set up Industrial Parks among others,” he said.

He thanked the Cabinet Secretary, Ministry of Education Science and Technology Dr Fred Matiang’i for finding time to address participants and commended him for ensuring that integrity and quality takes a central role in the education sector.

The Chairman assured the CS that TU-K was committed to producing quality in order to fulfill her mandate of providing technical education for the real world.

“That is why TU-K does not open campuses at every village market or secondary school. We want to offer courses that fulfill our mandate as a technical university and move the country closer to the realisation of Vision 2030,” he added.

Prof Nguru appealed to the Government to increase capitation noting that it will help the university complete some projects such as buildings.

Dr Matiang’i said this initiative by TU-K was the first in Kenyan universities.

Among those who made presentations included Commission for University Education CEO, Prof David Some, Masinde Muliro University of Science and Technology Vice-Chancellor, Prof Otieno, Prof John Mugabe of the University of Pretoria, South Africa, among others.

The event was also used to induct the recently appointed Associate Professors.
An invention by Dr Eric Ogur and his team at TU-K received a favourable order for their patent application from the Kenya Industrial Property Institute. In a recently published journal by the same institute, the team’s patent request was found to be in order.

The Biodiesel project which began in 2012 involves making fuel from waste vegetable oils and presents an inexpensive raw material for mass biodiesel production. Biodiesel is a natural oil or fat with an alcohol such as methanol or ethanol through trans-esterification, bringing the physio-chemical properties of the oils closer to those of the petro-diesel.

According to Green Facts, an environmental organisation, studies have found that producing first generation biofuels usually yields reductions in greenhouse gas emissions of 20 to 60 per cent when fossil fuels are replaced, provided the most efficient systems are used and carbon dioxide emissions from changes in land-use are excluded. Ethanol produced from sugar cane in Brazil and second-generation biofuels typically reduce emissions by 70 to 90 per cent.

Biodiesel use has recently experienced a major surge worldwide with a rapid expansion in production observed in both developed countries and those developing such as Argentina and Malaysia. Its similar characteristics to petroleum derived oil makes it a strong alternative to diesel oil.

Internet pioneer Ray Tomlinson, who is credited with the invention of e-mail, died in March 2016 at the age of 74.

According to reports, Tomlinson died of an apparent heart attack on the 5th of March 2016.

The US computer programmer came up with the idea of electronic messages that could be sent from one network to another in 1971.

His invention included the groundbreaking use of the “@” symbol in e-mail addresses, which is now standard.

He sent what is now regarded as the first e-mail while working in Boston as an engineer for research company Bolt, Beranek and Newman. The firm played a big role in developing an early version of the internet, known as Arpanet.

However, Tomlinson later said he could not remember what was in that first test message, describing it as “completely forgettable”.

His work was recognised by his peers in 2012, when he was inducted into the Internet Hall of Fame.
The Department of Music hosted The Ludwig Quartet comprising of 4 Professors from the United States of America. They included Prof Brandon Craswell, an Associate Professor of Trumpet at University of Georgia; Prof Robert White, an Assistant Professor of Trumpet from Western Michigan University School of Music; Prof Mark DeGoti, an Assistant Professor of Trumpet at Auburn University; and, Prof Joseph Van Fleet from the Faculty of Eastern Kentucky University.

The quartet, who were visiting Kenya and Africa for the first time, gave an astounding performance and recital to TU-K music students and student musicians at the Permanent Presidential Music Commission (PPMC). The repertoire ranged from Classical, Jazz to contemporary arrangements including an amazing rendition of Amazing Grace. In attendance were horn players from the Kenya Defense Forces Band, Kenya Prisons Band, Kenya Administration Police Band, Starehe Girls Centre and Kenyatta University.

The quartet later presented two trumpets to the Vice-Chancellor Prof Francis Aduol. While receiving the trumpets, the VC commended the Music Department for creating major collaborations both regionally and internationally.

The quartet gave an astounding performance and recital to TU-K music students and student musicians at the Permanent Presidential Music Commission (PPMC).
renowned media personality Alex Chamwada has asked journalism students to be more proactive and pursue first-hand experience within mainstream media challenging them that online platforms and digital broadcast channels have opened up vast multimedia outlets that can easily now be penetrated.

With an amassed wealth of journalism experience, Mr Chamwada told Technical University of Kenya (TU-K) Journalism and Mass Communication that a career in media demands persistence, vigor and personal initiative.

Mr Chamwada first went on air in 1994 at the global broadcaster - Voice of America (VOA) and has since worked for various local and international broadcasters.

Mr Chamwada was speaking during TU-K School of Information and Communication Studies public lecture themed: Professionalism in the information industry.

The school brings together two departments; Journalism and Mass Communication and Information and Knowledge Management. Oketch Kendo, a Journalism lecture and columnists at The Star Newspaper organized the forum in conjunction with the Editors Guild.

Among the panelists were Oracom Web and Kenya Online CEO and founder Mr Alphonce Juma and The Star Newspaper's Editor Mr Felix Olick.

“For the years I have worked at the newsroom, I have witnessed fresh graduates newly employed or on attachment who are disconnected from journalism practice,” Chamwada noted, indicating that the graduates must be knowledgeable and have a knack for news.

While you are still at school, you must establish contacts at the media, keep current affairs at your fingertips, and know what happens around you, said Chamwada.

He went on to add that editors want highly competitive reporters who are visible, can move around, scout for scoops, and pitch for good stories.

“Editors want graduates who hit the road running, this therefore means you must move beyond what university professors teach you in class, write stories, produce short documentaries, this way you will find yourself something to lay your hands on,” added Olick.

Mr Olick is a widely travelled print media journalist and editor who has on several occasions filed stories from various parts of the globe including the Hague-based International Criminal Court (ICC).

Mr Chamwada is currently a media consultant and media content developer. He has a contract with KTN: Daring Abroad series, and the Chamwada Report.

On the same breath, Oracom Web CEO Mr Alphonce Juma indicated that Information Communication and Technology (ICT) market equally demands practical aspects from graduate trainees.

“Every other time we employ fresh graduates for instance web developers, we are surprised that they cannot deliver the products we expect from them,” he noted insisting that the world demands practical know-how.

Among what Oracom Web and Kenya Online does are web and systems development, networks, telecommunication cyber security and management, information management, multimedia Programmeing.

Mr Juma also asked the students to approach technology networks among them ihub where they can be incubated and learn how to build their own consulting brands.
ACHIEVEMENT

FORMER TU-K STUDENT AND INTERNATIONAL KENYAN STRIKER MICHAEL “ENGINEER” OLUNGA, RECENTLY SIGNED A FOUR-YEAR DEAL WITH SWEDISH TOP TIER SIDE DJURGÅRDENS IF.

The almost fairy tale of Olunga began while he was still a student at the Upper Hill School. He began his career with the Liberty Sports Academy in the Nairobi County League. He scored 30 goals for the side during the 2012 season, helping them finish the season unbeaten and earn promotion to the Nairobi Provincial League. Initially reported to be attending trials in France, Olunga signed for Premier League side Tusker on a one-year loan deal from Liberty on 19 December 2012. After finishing the 2013 season with two goals for Tusker, Olunga was loaned to fellow Premier League side Thika United for another year, before joining Gor Mahia during the beginning of 2015 season. Olunga finished the season as the club’s top scorer in the league with 19 goals to help the side win a record 15th league title without losing a single match, including the second goal in a 2–0 win over Muhoroni Youth on their final league match of the season.

Speaking during the signing that took place in Sweden in February 2016, the club through their website exhibited excitement on their latest signing.

“Olunga will play for the Blue Stripes over the next four years. A signature that is welcomed by many DIF supporters, not least of Djurgårdens Sporting Director, Bosse Andersson,” the club said.

“Michael is a player we followed in early autumn, and he had the qualities we were looking for; very ambitious and purposeful, trains hard and always want to learn and take the next step. Then I think he made a fantastic impression as a person both on and off the pitch,” Anderson said on the club’s website.

Olunga was a second year Geospatial Engineering student at the TU-K, where he enrolled in 2013 and pursued a Bachelor of Engineering degree. For this reason, he is regularly known as “The Engineer” by Kenyan football fans.

“I will continue my studies at the University of Stockholm. To me it will be both football and studies and I am committed to do well in both,” he said.

Olunga made his debut for the Kenya national team in a friendly against Seychelles at the Stade Linité in Victoria on March 28, 2015. He scored his first goal for the Harambee Stars in a 2017 Africa Cup of Nations qualification match against Zambia and was voted Goal Kenya Player of the Year for 2015.

Latest signing

Michael Olunga after he signed with his new club Djurgårdens IF.

Michael Olunga in action for his former club, Gor Mahia.
US-BASED COMPANY TO INSTAL MODERN TECHNICAL LEARNING EQUIPMENT

The Technical University of Kenya (TU-K) has started collaborating with a US-based manufacturing company with the aim of introducing more modern, technical and advanced Engineering equipment for training Mechanical and Electrical Engineering students.

Through the Ministry of Education Science and Technology, a team from Amatrol Advanced Manufacturing Company based in Jeffersonville USA recently trained TU-K technicians and launched an advanced learning system software.

According to Mr Mark A. Hubbs, a Director at Amatrol, the equipment will be delivered in June this year.

The equipment to be installed include electrical and electronic systems featuring AC/DC voltage and current circuits, fuses circuit protection devices, circuit breaker and testers, potentiometers, solenoids among others.

Also expected are Mechanical Drive System equipment which include; fabrications, conveyors, hydraulic pumps, rollers and drives.

“What we were doing today is to introduce a software that demonstrate how the equipment operate, and how best they can be used to train Mechanical and Electrical Engineering students,” said Hubbs.

The Director at the same time disclosed that the students who will train under Amatrol will automatically get industrial training and job opportunities in companies associated to them worldwide including Toyota Kenya, Siemens, Car and General Motors, Ford, General Motors, Free Port, MC Moran, Caterpillar, General Mills among others.

“The equipment we use are designed for effective teaching purposes, they are durable and more superior in both multimedia and troubleshooting effects,” said Hubbs.

He added that some of these machines are already installed in various higher learning institutions in Ghana. The students who underwent the training have already been absorbed in the job market including petroleum and mining industries with focus areas on installations systems.

Kenya is the second in Africa to benefit from Amatrol training, the company started in 1981 and currently operates in 110 countries globally.

Kenya Technical and Vocational Education and Training Authority (TVETA) Director General Dr Kipkirui Langat indicated that the move is important in addressing the shortage of professionals in modern manufacturing industries in Kenya where foreign skilled personnel have in several occasions been hired.

“There is a serious shortage of technical skilled personnel in our industries including mechanics, maintenance technicians, assemblers, electricians, trouble shooters in modern manufacturing industries,” said Dr Langat.

Dr Langat added that the move is part of an initiative to replace the old equipment and keep up with global technology advancement.

Present during the meeting were TU-K DVC Prof Suki Mwendwa, Executive Dean, Faculty of Engineering, Science and Technology Prof Alex Muumbo, Department of Physics and Space Science Acting Director Prof Jackson Odote together with other senior university staff.
## THE TECHNICAL UNIVERSITY OF KENYA

### MODULE II PROGRAMMES AT UNDERGRADUATE AND DIPLOMA LEVELS

**STARTING SEPTEMBER 2016**

**Technical University of Kenya is the leading university in technological training. The University was awarded a Charter in 2013, making it a full public university. The University specialises in training at the Diploma, Undergraduate and Postgraduate levels, while at the same time engaging in research. It has a clear upward movement policy, which makes it easy for students to move from one level to the next and recognise prior training by awarding students credits. Interested students are encouraged to apply for the programmes listed in the attached schedule.**

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### SCHOOL OF ARCHITECTURE AND THE BUILT ENVIRONMENT

<table>
<thead>
<tr>
<th>COURSE TITLE</th>
<th>REQUIREMENTS</th>
<th>DURATION/FEES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Technology (Quantity Surveying)</td>
<td>Diploma in Technology in Building, Civil, Quantity Surveying or Architecture or 1st or Diploma in Building, Civil, Quantity Surveying or Architecture or Equivalent with at least 2 years relevant work experience</td>
<td>6 semesters • Tuition: Ksh 90,000/= per sem.</td>
</tr>
<tr>
<td>Bachelor of Technology (Construction Management)</td>
<td>Diploma in Technology in Building, Civil, Quantity Surveying or Architecture or Equivalent with at least 2 years relevant work experience</td>
<td>6 semesters • Tuition: Ksh 90,000/= per sem.</td>
</tr>
<tr>
<td>Bachelor of Technology (Building Construction)</td>
<td>Diploma in Technology in Building, Civil, Quantity Surveying or Architecture or Equivalent or 1st Diploma in Building and Architecture KNEC or Equivalent with at least 2 years relevant work experience</td>
<td>7 semesters for TEP diploma holders</td>
</tr>
<tr>
<td>Bachelor of Real Estate</td>
<td>Diploma in Real Estate Technology or Equivalent</td>
<td>7 semesters for TEP holders</td>
</tr>
<tr>
<td>Bachelor of Quantity Surveying</td>
<td>Diploma in Technology (Diploma in Technology) or Equivalent</td>
<td>7 semesters for TEP holders</td>
</tr>
<tr>
<td>Diploma in Technology (Real Estate)</td>
<td>Diploma in Technology (Diploma in Technology) or Equivalent</td>
<td>7 semesters for TEP holders</td>
</tr>
<tr>
<td>Diploma in Technology (Quantity Surveying)</td>
<td>Diploma in Technology (Diploma in Technology) or Equivalent</td>
<td>7 semesters for TEP holders</td>
</tr>
<tr>
<td>Diploma in Technology (Construction Management)</td>
<td>Diploma in Technology (Diploma in Technology) or Equivalent</td>
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<tr>
<td>Diploma in Technology (Building Construction)</td>
<td>Diploma in Technology (Diploma in Technology) or Equivalent</td>
<td>7 semesters for TEP holders</td>
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### SCHOOL OF SURVEYING AND GEOSPATIAL SCIENCES

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<tr>
<th>COURSE TITLE</th>
<th>REQUIREMENTS</th>
<th>DURATION/FEES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Philosophy in: • Geoinformation Technology</td>
<td>Higher Diploma in: • Geoinformation Technology • Surveying Technology</td>
<td>6 semesters (Evening) • Tuition: 90,000/= per sem.</td>
</tr>
<tr>
<td>Bachelor of Engineering in Geospatial Engineering</td>
<td>Bachelor of Engineering in Geospatial Engineering</td>
<td>2 semesters (Integrated programme) • Tuition: 90,000/= per sem.</td>
</tr>
<tr>
<td>Bachelor of Applied Science in Geoinformatics</td>
<td>Bachelor of Science in Applied Science (Int. Eng. and Electronics Engineering)</td>
<td>6 semesters • Tuition: 90,000/= per sem.</td>
</tr>
<tr>
<td>Bachelor of Technology: • Geoinformation Technology</td>
<td>Diploma in Technology • Surveying Technology</td>
<td>5 semesters • Tuition: 90,000/= per sem.</td>
</tr>
<tr>
<td>Bachelor of Technology: • Surveying Technology</td>
<td>Diploma in Technology (Diploma in Technology) or Equivalent</td>
<td>5 semesters • Tuition: 90,000/= per sem.</td>
</tr>
<tr>
<td>Bachelor of Science Land Administration</td>
<td>Diploma in Technology in Mathematics, Geography, Economics, Biology/Group IV/V or Relevant Certificate in Eng.</td>
<td>13 semesters (Integrated programme) • Tuition: 90,000/= per semester</td>
</tr>
<tr>
<td>Diploma in Technology: • Geoinformation Technology</td>
<td>Diploma in Technology</td>
<td>5 semesters • Tuition: 90,000/= per sem.</td>
</tr>
</tbody>
</table>

### SCHOOL OF SURVEYING AND GEOINFORMATIC TECHNOLOGIES

<table>
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<tr>
<th>COURSE TITLE</th>
<th>REQUIREMENTS</th>
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</thead>
<tbody>
<tr>
<td>Bachelor of Science in: • Geoinformatics Technology</td>
<td>Higher Diploma in: • Geoinformation Technology • Surveying Technology</td>
<td>6 semesters (Evening) • Tuition: 90,000/= per sem.</td>
</tr>
<tr>
<td>Bachelor of Technology in: • Geoinformatics Technology • Surveying Technology</td>
<td>Bachelor of Technology in Geospatial Engineering</td>
<td>2 semesters (Integrated programme) • Tuition: 90,000/= per sem.</td>
</tr>
<tr>
<td>Bachelor of Science Land Administration</td>
<td>Diploma in Technology in Mathematics, Geography, Economics, Biology/Group IV/V or Relevant Certificate in Eng.</td>
<td>13 semesters (Integrated programme) • Tuition: 90,000/= per semester</td>
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### SCHOOL OF ELECTRICAL AND ELECTRONIC ENGINEERING

<table>
<thead>
<tr>
<th>COURSE TITLE</th>
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<th>DURATION/FEES</th>
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<tbody>
<tr>
<td>Bachelor of Engineering in Electrical and Electronic Engineering</td>
<td>Bachelor of Engineering in Electrical and Electronic Engineering</td>
<td>5 semesters • Tuition: 90,000/= per sem.</td>
</tr>
<tr>
<td>Bachelor of Technology in Electrical and Electronic Engineering Technology</td>
<td>Bachelor of Technology in Electrical and Electronic Engineering Technology</td>
<td>5 semesters • Tuition: 90,000/= per sem.</td>
</tr>
</tbody>
</table>
### Course Title Requirements Duration/Fees

**Bachelor of Technology in Electrical and Electronic Engineering Technology**  
- **Requirements:**  
  - KCSE mean grade of C+ in Maths, Physics, Chemistry and Biology/Group IV/  
    - Note: Group IV/ Technology  
  - 10 semesters (integrated programme)  
  - Tuition: Ksh. 40,000/= per sem.

**Diploma in Technology (Electrical and Electronic Engineering)**  
- **Requirements:**  
  - KCSE mean grade of C (Plus) with at least C in Maths, Physics, Chemistry and Biology/  
    - Group IV/V or relevant Certificate in Engineering  
  - 8 semesters (integrated programme)  
  - Tuition: 90,000/= per sem.

**School of Infrastructure and Resource Engineering**

**Bachelor of Engineering (Civil Engineering)**  
- **Requirements:**  
  - KCSE mean grade of C+ in Mathematics, Physics, and English and Chemistry  
  - 13 Semesters, Ksh. 90,000 per Semester

**Bachelor of Technology (Civil Engineering)**  
- **Requirements:**  
  - 3-year Ordinary Diploma or Diploma in Civil, Highway, Water Engineering, Building Construction or equivalent  
  - 6 Semesters, Ksh. 90,000 per Semester

**Diploma in Technology – Civil Engineering**  
- **Requirements:**  
  - KCSE mean grade of C+ in Maths, Physics, Chemistry, or Certificate in Civil or Water Engineering  
  - 10 Semesters, Ksh. 36,000 per Semester

**School of Mechanical and Process Engineering**

**Bachelor of Engineering in Aeronautical Engineering**  
- **Requirements:**  
  - KCSE mean grade of C+ in at least C in Maths, Physics, Chemistry and Biology/Group IV/V  
  - 11 Semesters (integrated programme)  
  - Tuition: 90,000/= per sem.

**Bachelor of Engineering in Chemical Engineering**  
- **Requirements:**  
  - KCSE mean grade of C+ in at least C in Maths, Physics, Chemistry and Biology/Group IV/V  
  - 11 Semesters (integrated programme)  
  - Tuition: 90,000/= per sem.

**Bachelor of Technology in Chemical Engineering**  
- **Requirements:**  
  - 3-year Diploma in Technology (Chemical Engineering)  
  - 4 Semesters (Evening)  
  - Tuition: 90,000/= per sem.

**School of Mathematics and Statistics**

**Bachelor of Science in Biochemistry**  
- **Requirements:**  
  - KCSE mean grade of C+ (plus) with C in Maths, Physics and Group IV/V  
  - 4 Semesters  
  - Tuition: 36,000/= per Semester

**School of Physical Sciences and Technology**

**Bachelor of Science in Technology (Biological and Life Sciences)**  
- **Requirements:**  
  - KCSE mean grade of C in English, Physics/Physical Science, and Biology/Chemistry  
  - 4 semesters  
  - Tuition: Ksh. 20,000/= per sem.

**School of Health Sciences and Technology**

**Bachelor of Technology in Community and Public Health**  
- **Requirements:**  
  - KCSE mean C (plus) with C in English or Kiswahili, Biology, Chemistry and Mathematics or Physics or have A-Level or equivalent with a minimum of two principal passes in Chemistry and Biology and a subsidiary level pass in Mathematics or Physics or have a Diploma in a medical area from a recognized institution.  
  - 11 Semesters  
  - Tuition: 70,000/= per semester First Aid – 5000/= per semester

**School of Computing and Information Technology**

**Bachelor of Technology (In: Options)**  
- **Requirements:**  
  - KCSE mean grade of C+ including C in Maths, Physics, Chemistry and Biology/Group IV/V  
  - 10 semesters (integrated full time)  
  - Tuition: 70,000/= per sem.

**School of Applied Sciences and Technology**

**Bachelor of Philosophy in Technology (Applied Statistics)**  
- **Requirements:**  
  - Higher Diploma in Applied Statistics / Actuarial Sciences  
  - 4 Semesters  
  - Tuition: 70,000/= per sem.

**Bachelor of Science in Mathematics**  
- **Requirements:**  
  - KCSE mean grade of C (plus)/C with C in Maths, Physics, Group IV/Group II and 2nd Group IV/V or Group IV/V  
  - 10 Semesters (integrated programme)  
  - Tuition: 70,000/= per sem.

**School of Infrastructure and Resource Engineering**

**Bachelor of Technology in Chemical Engineering**  
- **Requirements:**  
  - KCSE mean grade of C (Plan) with at least C in English, Maths, Physics/Physical Science  
  - 5 Semesters  
  - Tuition: 36,000/= per semester

**School of Physical Sciences and Technology**

**Bachelor of Science in Technology (Analytical Option)**  
- **Requirements:**  
  - Higher Diploma in Applied Chemistry (Analytical option) or Equivalent qualification.  
  - 3 years;  
  - Tuition: KSH36,000/= per semester

**School of Health Sciences and Technology**

**Bachelor of Phillips in Technology in Community and Public Health**  
- **Requirements:**  
  - KCSE mean C (plus) with C in English or Kiswahili, Biology, Chemistry and Mathematics or Physics or have A-Level or equivalent with a minimum of two principal passes in Chemistry and Biology and a subsidiary level pass in Mathematics or Physics or have a Diploma in a medical area from a recognized institution.  
  - 11 Semesters  
  - Tuition: 70,000/= per semester First Aid – 5000/= per semester

**School of Applied Sciences and Technology**

**Bachelor of Science in Biochemistry**  
- **Requirements:**  
  - KCSE mean grade of C+ (plus) with C in Bio, Chem, Phys/Maths and Group IV/V  
  - 5 Semesters  
  - Tuition: 70,000/= per sem.

**School of Health Sciences and Technology**

**Bachelor of Technology in Community and Public Health**  
- **Requirements:**  
  - KCSE mean C (plus), with C in English or Kiswahili, Biology, Chemistry and Mathematics or Physics or have A-Level or equivalent with a minimum of two principal passes in Chemistry and Biology and a subsidiary level pass in Mathematics or Physics or have a Diploma in a medical area from a recognized institution.  
  - 11 Semesters  
  - Tuition: 70,000/= per semester First Aid – 5000/= per semester

**School of Computing and Information Technology**

**Bachelor of Technology in Medical Laboratory Technology**  
- **Requirements:**  
  - KCSE mean grade C (plus), with C in Bio, Chem, Physics/Group Maths and Group IV/V  
  - 5 Semester  
  - Tuition: 70,000/= per sem.

**School of Applied Sciences and Technology**

**Bachelor of Science in Biochemistry**  
- **Requirements:**  
  - KCSE mean grade C (plus) with C in Bio, Chem, Phys/Maths and Group IV/V  
  - 5 Semesters  
  - Tuition: 70,000/= per sem.

**School of Health Sciences and Technology**

**Bachelor of Technology in Community and Public Health**  
- **Requirements:**  
  - KCSE mean C (plus), with C in English or Kiswahili, Biology, Chemistry and Mathematics or Physics or have A-Level or equivalent with a minimum of two principal passes in Chemistry and Biology and a subsidiary level pass in Mathematics or Physics or have a Diploma in a medical area from a recognized institution.  
  - 11 Semesters  
  - Tuition: 70,000/= per semester First Aid – 5000/= per semester

**School of Computing and Information Technology**

**Bachelor of Technology in Medical Laboratory Technology**  
- **Requirements:**  
  - KCSE mean grade C (plus), with C in Bio, Chem, Physics/Group Maths and Group IV/V  
  - 5 Semester  
  - Tuition: 70,000/= per sem.
**SCHOOL OF BUSINESS AND MANAGEMENT STUDIES**

<table>
<thead>
<tr>
<th>COURSE TITLE</th>
<th>REQUIREMENTS</th>
<th>DURATION/FEES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Commerce (Options):</td>
<td>• Accounting</td>
<td>5 semesters Tuition: Ksh. 60,000/= per semester</td>
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<tr>
<td></td>
<td>• Finance</td>
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<td></td>
<td>• Business Management</td>
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<td></td>
<td>• Human Resource Management</td>
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<td></td>
<td>• Marketing Management</td>
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<td></td>
<td>• Logistics and Supply Chain Management</td>
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<tr>
<td></td>
<td>• Entrepreneurship</td>
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<tr>
<td></td>
<td>• Insurance</td>
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<tr>
<td></td>
<td>• Procurement and Supply Mgr.</td>
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<tr>
<td></td>
<td>• Information Systems</td>
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<td></td>
<td>• Operations Management</td>
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<tr>
<td>Bachelor of Science in Acoustics</td>
<td>• KCSE Mean grade of C in Mathematics and English/Kiswahili, Any group III, Any group II/2nd group A/any group V or equivalent qualification</td>
<td>10 semesters Tuition: Ksh. 60,000/= per semester</td>
</tr>
<tr>
<td>Bachelor of Science in Accounting</td>
<td>• KCSE Mean grade of C with C in Mathematics and English/Kiswahili, Any group III, Any group II/2nd group A/any group V or equivalent qualification</td>
<td>10 semesters Tuition: Ksh. 60,000/= per semester</td>
</tr>
<tr>
<td>Bachelor of Business Information Technology</td>
<td>• Higher Diploma (HDB) in Business Management or Equivalent OR 3 year Diploma in a Business Course or its equivalent or OWA/CPS Part II or equivalent</td>
<td>5 semesters Tuition: Ksh. 60,000/= per semester</td>
</tr>
<tr>
<td>Bachelor of Technology (Business Information Technology)</td>
<td>• KCSE Mean grade of C with C in Mathematics and English/Kiswahili, Any group III, Any group II/2nd group A/any group V or equivalent qualification</td>
<td>10 semesters Tuition: Ksh. 60,000/= per semester</td>
</tr>
<tr>
<td>Bachelor of Technology in Office Administration and Technology</td>
<td>• KCSE Mean grade of C with C in Mathematics and English/Kiswahili, Any group III, Any group II/2nd group A/any group V or equivalent qualification</td>
<td>5 semesters Tuition: Ksh. 60,000/= per semester</td>
</tr>
<tr>
<td>Diploma in Business Information Technology</td>
<td>• KCSE Mean Grade D2 [with D plus in English, Maths or Certificate in Information Technology ]</td>
<td>8 semesters Tuition Fees 24,000/=</td>
</tr>
<tr>
<td>Diploma in Entrepreneurship</td>
<td>• KCSE Mean Grade C minus with D plus in English, Maths or Business Studies/ Commerce/Accounting/Economics OR 2 year Certificate in Sales and Marketing (KPCU or Equivalent) + Advanced Certificate in Sales Management (KNEC) + Add Er. Certificate in Business Administration (KNEC) + 2 Certificate in Business Studies, Certificate in procurement and supply management, 2 Certificate in Business studies, Certificate in sales and Marketing</td>
<td>8 semesters (Evening) Tuition: Ksh. 24,000/= per semester</td>
</tr>
<tr>
<td>Diploma in Business Studies Options:</td>
<td>• Business Administration</td>
<td>8 semesters Tuition Fees 24,000/= per semester</td>
</tr>
<tr>
<td></td>
<td>• Human Resource Management</td>
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</tr>
<tr>
<td></td>
<td>• Sales and Marketing Management</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Procurement and Supply Chain Management</td>
<td></td>
</tr>
<tr>
<td>Bachelor of Technology in Office Administration and Technology</td>
<td>• KCSE Mean grade of C with C in Mathematics and English/Kiswahili, Any group III, Any group II/2nd group A/any group V or equivalent qualification</td>
<td>5 semesters Tuition: Ksh. 60,000/= per semester</td>
</tr>
<tr>
<td>Diploma in Business Information Technology</td>
<td>• KCSE Mean Grade C minus with D plus in English, Maths or Certificate in Information Technology</td>
<td>8 semesters Tuition Fees 24,000/=</td>
</tr>
<tr>
<td>Diploma in Entrepreneurship</td>
<td>• KCSE Mean Grade C minus with D plus in English, Maths or Business Studies/ Commerce/Accounting/Economics</td>
<td>8 semesters Evening Tuition: Ksh. 24,000/= per semester</td>
</tr>
<tr>
<td>COURSE TITLE</td>
<td>REQUIREMENTS</td>
<td>DURATION/FEES</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>Bachelor of Science in Hospitality Management</td>
<td>• KCSE C+ Mean grade and C+ in A-levels or Equivalent: a minimum of 2 principals pass.</td>
<td>50 Semesters KES. 65,000 Tuition Fee per semester. Field Fee: 35,000/=</td>
</tr>
<tr>
<td>Bachelor of Science in Tourism and Travel Management</td>
<td>• KCSE C Mean grade and C in Kisw/Eng, Maths, Group I/II and 2nd Group I/II or Group I/IV</td>
<td>50 Semesters KES. 60,000 Tuition Fee per semester. Field Fee: 35,000/=</td>
</tr>
<tr>
<td>Bachelor of Technology in Tourism and Travel Management</td>
<td>• 3-year Diploma in Tourism and Travel or Equivalent. A mandatory 2 years relevant industry experience.</td>
<td>5 Semesters: KES. 60,000 Tuition Fees per semester. Field Fee: 35,000/=</td>
</tr>
<tr>
<td>Diploma in Technology in Tourism and Travel Management</td>
<td>• KCSE C Mean grade and C/minus in Kisw/Eng, Maths, Group I/II and 2nd Group I/II or Group I/IV or relevant certificate</td>
<td>5 Semesters: KES. 36,000 Tuition Fees per semester. Field Fee: 35,000/=</td>
</tr>
</tbody>
</table>

Application Procedure

Please read the following application guidelines carefully before you apply:

Applications for the Courses above should be made by completing and printing the online application form available on the Technical University of Kenya application portal: intake.tukenya.ac.ke.

The application form should be accompanied by copies of ACADEMIC CERTIFICATES, ID CARD and the following statutory fees:

- Registration Kshs. 2,000
- Library Kshs. 3,000
- Medical Kshs. 2,000
- Examination Kshs. 5,000
- Computer Ksh. 5,000
- Activity Ksh. 1,000
- Insurance Ksh. 500
- Student Union Ksh. 500
- Maintenance Ksh. 600
- Sports Ksh. 500
- Refundable Caution Money Ksh. 2,000

Students participating in attachment shall pay Ksh. 1,350/= administrative fees. No cash or cheque payments will be accepted at the University.

You can track your application status after submission from the application portal above.

All payments be made to:

Account Name: Technical University of Kenya
Cooperative Bank: A/C No. 01129006243960 or Equivalent: A/C No. 054200593766

Please QUOTE THE FORM REFERENCE NUMBER while paying the application fees at the bank. The application should be addressed to the SENIOR ASSISTANT REGISTRAR – STUDENT RECRUITMENT AND ADMISSIONS, THE TECHNICAL UNIVERSITY OF KENYA to reach the University on or before 3rd June, 2016.

Haile Selassie Avenue • P. O. Box 52428 – 00200, City Square, Nairobi • Tel: +254 20 2219929, 3341639 • Fax: +254 (020) 2219689 • E-mail: registrar-academic@tukenya.ac.ke

http://www.tukenya.ac.ke Education and training for the real world

TU-K students in the Mechanical Engineering lab
THE TECHNICAL UNIVERSITY OF KENYA

POSTGRADUATE DEGREE PROGRAMMES STARTING SEPTEMBER 2016

HE Technical University of Kenya (TU-K) is one of the special public universities in Kenya providing education and training. At the same time, it engages in research and innovation that is focused on application of technological knowledge and skills in the solution of societal problems. The University invites applications from suitable and qualified persons to enrol for the following postgraduate programmes:

**SCHOOL OF GRADUATE AND ADVANCED STUDIES**

**Starting September 2016**

**Programme Eligibility Duration**

**School of Mathematics and Actuarial Science**

Master of Science in Applied Statistics
- A second class honours degree (Upper Division) from a recognized university OR
- A second class honours degree (Lower Division) from recognized university at least two years working experience OR
- A master’s degree in Mathematics, Statistics, or any relevant field approved by the University Senate with at least two years working experience

Duration: 4 semesters

Applications for the Courses above should be made by completing and printing the online application form available on the Technical University of Kenya application portal: intake.tukenya.ac.ke

Note:
- Group I: Bachelor’s degree in Technology or its equivalent
- Group II: Bachelor’s degree (Upper Division) from a recognized university with at least 1 year relevant experience
- Group III: Bachelor’s degree (Lower Division) from a recognized university with at least 2 years relevant experience
- Group IV: Relevant work experience of at least 5 years

**Fees Structure (KSHS)**

<table>
<thead>
<tr>
<th>Description</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reg</td>
<td>2,000</td>
<td>2,000</td>
<td>-</td>
<td>4,000</td>
</tr>
<tr>
<td>Insurance</td>
<td>500</td>
<td>500</td>
<td>-</td>
<td>1,000</td>
</tr>
<tr>
<td>Medical</td>
<td>1,000</td>
<td>1,000</td>
<td>-</td>
<td>2,000</td>
</tr>
<tr>
<td>Library</td>
<td>800</td>
<td>800</td>
<td>-</td>
<td>1,600</td>
</tr>
<tr>
<td>Computer</td>
<td>2,000</td>
<td>2,000</td>
<td>-</td>
<td>4,000</td>
</tr>
<tr>
<td>Theses Examination</td>
<td>17,500</td>
<td>17,500</td>
<td>-</td>
<td>35,000</td>
</tr>
<tr>
<td>Caution Money (refundable)</td>
<td>2,500</td>
<td>-</td>
<td>-</td>
<td>2,500</td>
</tr>
</tbody>
</table>

Note:
- Group I: Engineering, Print, Design, Creative Arts, Hospitality and Catering
- Group II: Pure and Applied Science, Medical Laboratory and Health Sciences
- Group III: Information and Communication Technology, Tourism, Graphic Design, Music
- Group IV: Humanities and Social Science

Foreign students from outside East African Countries shall pay 20% more on tuition and statutory fees.

Applications should be submitted alongside the following documents:
- Two (2) recent passport size photographs
- A completed application Form
- A copy of one’s identification and University of East Africa Degree Certificate
- A copy of the mark sheet
- A copy of one’s KCSE results
- One (1) copy of the transcript of one’s degree from the University

Application deadline: 3rd June 2016.

The Director, School of Graduate and Advanced Studies | The Technical University of Kenya | P.O. Box 53428 – 00200, NAIROBI | Tel: +254 20 2219929, 3345399 • Fax: +254 (020) 2219898

April 2016 43
EDUCATION AND TRAINING FOR THE REAL WORLD

The Technical University of Kenya
Education and training for the real world

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Email: info@tukenya.ac.ke

Facebook: Technical University of Kenya
Twitter: @TU_kenya