

TUNNEWS

A publication of the Office of the Vice-Chancellor

APRIL 2016

SETTING THE PACE IN INNOVATION





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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.



**Prof Dr.-Ing. Francis W.O. Aduol,
The Vice-Chancellor**

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Billy Mutai, Lucy Anaya, Bernard Awino, John Oguta, David Mwangi

COVER PHOTO:
Phillip Njukia, 4th Year BBIT



Technical University of Kenya



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TU-K PROMOTES MORE FACULTY MEMBERS TO FULL PROFESSORS

Prof Joseph Kiplang'at



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.

Prof Suki Mwendwa

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.



Prof Emily Akuno



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 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 Faustin Ondore

TU-K alumnus and thematic lecturer, 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.

Dr Ondore completed his Diploma in Air Transport Southall 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 Cranfield 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 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 and Scientist at Egerton University (2000-2002, 2009-2012). Prior to that he worked as a Research Assistant in the College of Pharmacy at Idaho State University 2002-2007. He was also a Post-Doctoral Research Associate Scientist (Neuroscience) at the Western Reserve University Medical Centre and University Hospitals of Cleveland Ohio, USA, 2007-2009.

He is currently the Acting Director, School of Health Sciences and Technology;

Senior Lecturer and Neuroscientist, Department of Pharmaceutical Science and Technology.

He holds a PhD in Pharmaceutical Sciences from Idaho State University (2007), a MSc in Biochemistry and Molecular Biology from Egerton University (2000), and a BSc in Chemistry/Biochemistry (1996) from the same institution. Orina has supervised 5 Masters Students in Biochemistry and is currently supervising 6 PhD students in Biomedical Sciences/Biochemistry/Nutrition. He has 16 publications under his belt and is a member of the Biomedical Society of Kenya.

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 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.

Previously Mboya worked as a Lecturer at Kisii University (2014 – 2015), University of Nairobi (2010 – 2011), University of Leeds (2005 -2009) and Catholic University of Eastern Africa (2009 – 2015).

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 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.

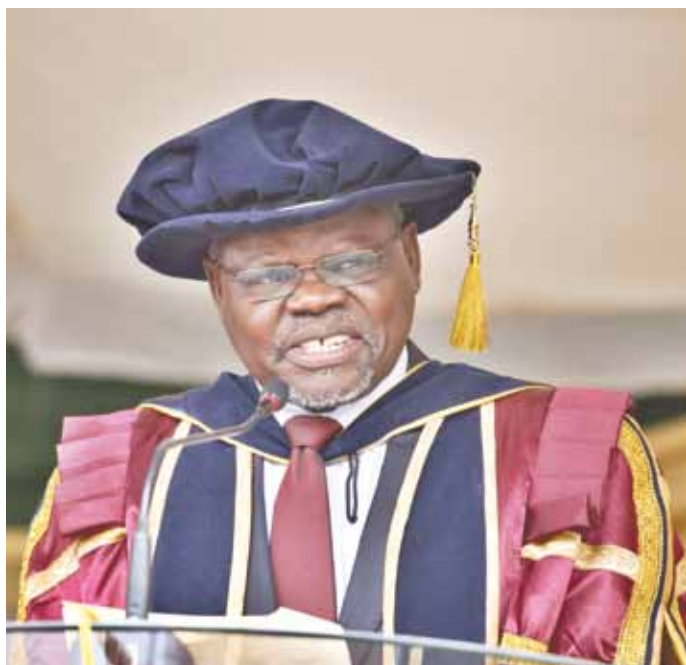
He is a member of the Physics Society of Kenya and the Kenya National Academy of Sciences.

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.

SUCCESS OF KENYAN ECONOMY IS IN YOUR HANDS: TU-K LEADERSHIP TELLS GRADUATES



Prof Francis Aduol, TU-K Vice-Chancellor.



Prof Godfrey Nguru, TU-K Chairman.

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

“After more than 50 years of Independence, we should begin to rely on our own homebred technical expertise to address most of our development challenges.”- Dr Matiang’i

inspired personnel who will drive the pillars of Vision 2030,” he said.

“After more than 50 years of independence, we should begin to rely on our own homebred technical expertise to address most of our development challenges,” 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.

“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.

BE INNOVATIVE IN YOUR DEEDS - CHANCELLOR ADVISES GRADUANDS

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



Dr Manu Chandaria, TU-K Chancellor.

"By integrating industry, academia and community, TU-K will enable the country resolve real issues and a trainee to become industry compliant or self-employed." – Manu Chandaria

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.



Some of the graduands during TU-K's 3rd Graduation ceremony.

FRANCE TO PARTNER WITH KENYAN VARSITIES



The Vice-Chancellor Prof Francis Aduol and the French Ambassador to Kenya Mr Remi Marechaux at the University's Main Hall where the diplomat delivered a public lecture.

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.

"Some of the companies such as Lafarge, which produces Bamburi Cement has the Managing Director as the only expatriate while the rest of the staff are Kenyans. "We believe in giving a chance to Kenyans with the right skills to work in French-owned companies operating locally and internationally," said Maréchaux.

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.



The Vice-Chancellor Prof Francis Aduol (right) bids farewell to the Ambassador of France.

TU-K STUDENTS MOVE ARCHITECTURE LANDSCAPE A NOTCH HIGHER



Model impression of the West Pokot County Assembly

TU-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 sub-contracted 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,” said Otieno.

“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.



Mr Caleb Otieno holding model impression of apartments in Riverside Drive, Nairobi.

TU-K INNOVATIONS DRAW C

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 Lewa



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.

Prof Aduol who was accompanied by his three deputies Professors Joseph Kiplangat, Paul Shiundu and Suki Mwendwa and Executive Deans among other University leadership said the fresh ideas are economically viable and can be translated to massive business ventures.

Mtana asked KUCCPS to ensure that secondary school students who meet the minimum university entry requirements are admitted

Technical 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.

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 its minimal water use.



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.



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



SMS-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.

TU-K DON IN GROUND-BREAKING STUDY ON PURPLE TEA ANTIOXIDANTS



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



Sample of purple tea antioxidant

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

The crucial components extracted from Purple Tea were anthocyanins (purple water soluble pigments found in the purple tea) and catechins

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.

SEVEN SEAS CEO URGES VARSITY STUDENTS TO INNOVATE

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



Seven Seas Technologies CEO Mr Mike Macharia viewing some of the student-innovated projects during the First Innovator-Investor Forum at TU-K.

that will create job opportunities, wealth and improve the economy," added the 45 year old CEO.

The Forum themed, "Propelling innovations in ICT, Engineering and

"Think innovation while still young and actively search for every available opportunity"
— Mike Macharia

Architecture geared toward achieving Vision 2030," saw participation from stakeholders representing various industries. Miss Eunice Kariuki - MD -

ICT Authority of Kenya, Kelvin Majau - CEO Urithi Housing Co-operative Society Limited, Mr Justus Mbithi - Deputy Director-Renewable Energy, Ministry of Energy, Mr Macharia Gichohi - MD Agricom Resource Centre, Mr Kevit Desai- MD Centurion Systems, Catherine Njoki - Marketing Manager Institute of Software Technologies, Captain Clifford Obara - Head of Administration Capital Connect Aviation and Miss Caroline Ndanu - CEO, Cubic Print and Design Limited participated.

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



TU-K HOSTS THIRD INTERNATIONAL GLOBAL CONFERENCE ON INNOVATION

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

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

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.



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.



Dr Nicholas Ozor

2015 GRADUATION PICTORIAL



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





TU-K ACQUIRES NEW SCIENCE EQUIPMENT



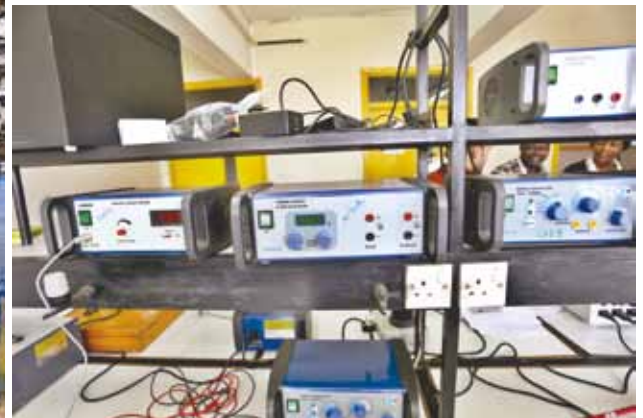
Some of the New Physics Equipment.



Liquid Nitrogen Container.



Spectroscopy Experiment kit.



Four Probe Method kit.

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.

"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

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.

TECHNO CITY CEO WANTS UNIVERSITY STUDENTS TO THINK START-UPS, INNOVATIONS

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.

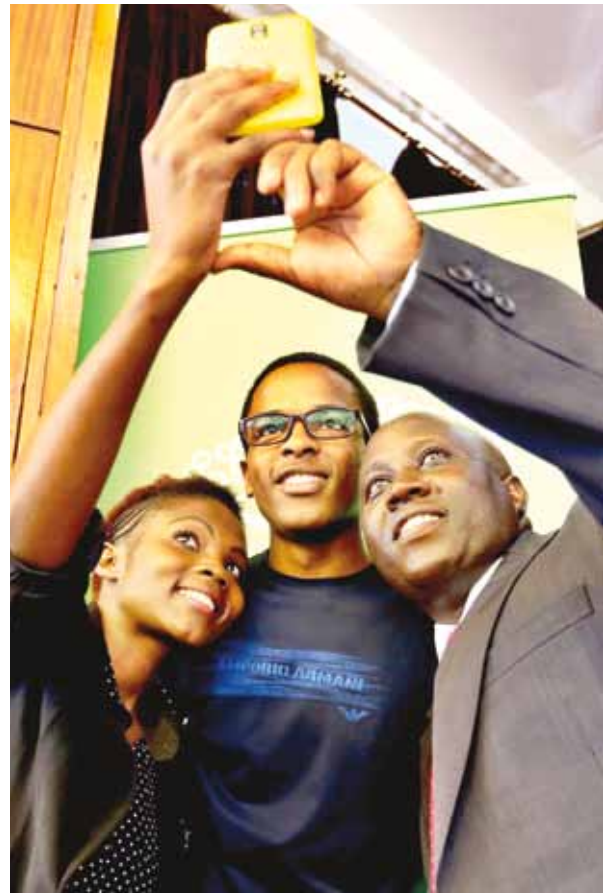
Tanui indicated that Techno City Management is in talks with TU-K to come up with a memorandum that will see university graduates and ongoing students get work and internship opportunities in the ongoing construction.

"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

"Several multinational companies have since acquired space at the City's ground are expected to put up their companies."

– Konza Techno City CEO
Eng. John Tanui



Konza Techno City CEO Eng. John Tanui takes a Selfie with TU-K students after the Public Lecture.



Konza Techno City Business Development Director David Mugambi speaking during the public lecture at the TU-K.

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 as this will open up wider market opportunities since they will be selling their products and services locally and abroad, it will also boost

Kenya's economy and create jobs," said the CEO.

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.

TU-K RECEIVES AVIATION SIMULATOR EQUIPMENT



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

Aerosim Technologies Commercial Director Simon Newcombe explaining functions of Aviation Simulator when it was commissioned.

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

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.

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 AFDB 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.

TSHWANE UNIVERSITY OF TECHNOLOGY TO TRAIN TU-K TECHNOLOGISTS AND TECHNICIANS



TU-K Director, Centre for Engineering, Innovation and Production Dr Eric Ogur during the training.

South African Tshwane University of Technology (TUT) has partnered with Technical University of Kenya (TU-K) to train TU-K Technicians, Technologists and Master of Technology students on a special technology used in manufacturing plastic materials and parts.

In January this year, the two institutions conducted a two-week intensive training at TU-K designed to build capacity on fundamentals of injection molding, a massive and complex technology process used in the manufacture of more than 40 per cent of plastic materials.

According to Jeffrey Makhubela,

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.



Tshwane University of Technology instructors takes Technical University of Kenya Technicians, Technologists and Master of Technology students through the training

FACULTY OF APPLIED SCIENCES AND TECHNOLOGY GETS A NEW DEAN

Prof Francis K. Gatheri is the new Executive Dean, Faculty of Applied Sciences and Technology (FAST).

He replaces Prof Michael L. Muia whose term recently ended.

The appointment was made by the TU-K Council following an advertisement of the vacancy and subsequent interviews.

Gatheri is a Professor of Mathematics at the Technical University of Kenya. Until his appointment, he served as the Director, School of Mathematics and Actuarial Sciences. He joined TU-K as Associate Professor in



Prof Francis K. Gatheri, PhD

Mathematics in 2010.

Previously Prof Gatheri served as a Senior Lecturer (Applied Mathematics)



Prof Michael L. Muia, PhD

at JKUAT between 2006 and 2010. He also worked as a Lecturer at Kenyatta University between 1994

and 2006, part-time Tutor at the University of New South Wales, between 1990 and 1994 and as an Assistant Lecturer at Egerton University between 1989 and 1990.

Prof Gatheri has 12 publications under his name. He has published widely in peer reviewed journals and also presented papers in conferences both locally and internationally.

Prof Gatheri holds a PhD from the University of New South Wales, M.Sc (Applied Mathematics) and B.Ed (Science), from Kenyatta University where he graduated in 1987 and 1989 respectively.

MASTERS PROGRAMMES UNVEILED

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.

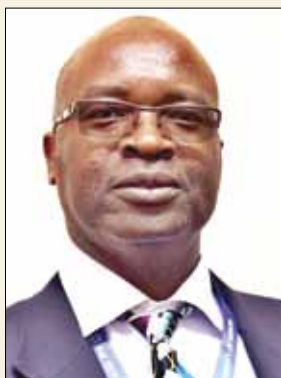
With rapid technological growth in Kenya, innovation is key in building home grown technologies and solutions to ensure socio-economical growth.

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



*Dr Hesbon Nyagowa,
Registrar - Academic*

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.



Technical University of Kenya Administration Block.

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?

As 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 graduates from the employment market will hold up. "You would hope

that one of the promises of technology is improved productivity, and that essentially means fewer people doing more," he acknowledges. "From what I can see, this is working all too well, in that - sure - more and more activities are being automated, but the demand for people with the ability to design and build such systems is insatiable. I don't know what percentage of the world's important software is written here in the Valley, but it is a certainly a significant fraction, and we are not producing anywhere near as many people as industry would like, [even though Stanford's] major [in computer science] has grown by a factor of four in the past five years."

In light of the - to me - astonishing salaries commanded in Silicon Valley by skilled software folk, it is evident that there is still a huge demand from the market, at least in California, for information systems and information 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."

CHANGE JOB TITLES TO STOP 'SECOND CLASS' TAG FOR TEACHERS

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.

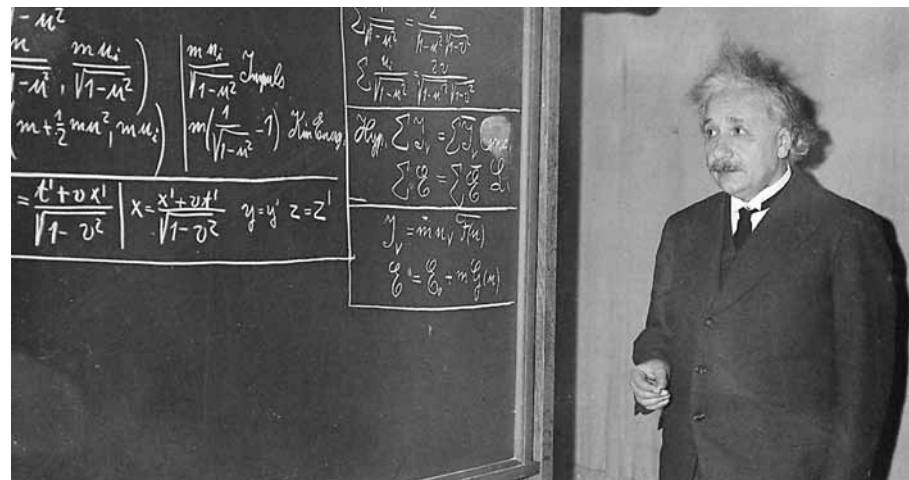
“Teaching fellow” carries a kind-of-packhorse ‘covering somebody else’s research leave’ connotation,” explains one head of department.

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 London School of Economics, said that altering job titles would help to move towards parity of esteem between research and teaching staff.

“In an ideal world, everyone would simply be ‘lecturers’, with some focused more on research and some on teaching, depending on the point in their career,” said Dr Fung.

Other relatively simple changes could also help to increase the esteem attached to teaching, according to Dr Fung and Dr



Gordon.

For instance, 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

“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”.

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.

FRANCE LAUNCHES DEGREE QUALIFICATIONS DATABASE



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.

"We're digitally modernising 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."

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.

TU-K AND KUSU SIGN COLLECTIVE BARGAINING AGREEMENT



Deputy Vice-Chancellor Prof Joseph Kiplang'at (Left), Vice-Chancellor Prof Francis Aduol, Kenya University Staff Union (KUSU) Secretary Engineer Patrick Ogutu and Union Vice-Chairperson Fredrick A. Oloo when they signed the Collective Bargaining Agreement (CBA).

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 team was voted into office in February 2016.

The agreement shall remain in force until jointly revised or another agreement is signed, otherwise the implementation of the allowances and terms and conditions of the CBA shall be back dated to 1st July 2013.

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)

Grade	Rate per day (KSh)
XIV	9,500
XIII	8,500
XII	8,000
XI	7,000
X	6,500
IX	6,000
VIII	5,500
VII	5,000
VI	4,500
V	4,000

TRIP ALLOWANCE

½ rate of subsistence allowance as follows:

Grade	Rte per day (KSh)
XIV	4,750
XIII	4,250
XII	4,000
XI	3,250
X	3,000
IX	2,750
VIII	2,500
VII	2,250
VI	2,000
V	1,750



Ida Odinga (2nd right) arriving at Technical University of Kenya, where she delivered a public lecture on “Inspiring Change in Society.” She was received by TU-K student leaders.



Ida Odinga joins TU-K students in a jig.

Mr Festus Cheruiyot (right), a technician from the Mechanical Engineering Department, demonstrates how the Motorised jerk works to St. Austins Academy students during the school's annual career day. TU-K's participation was part of the Universities Global Community Engagement Programme.



TU-K'S VERTICAL FARMING TECHNOLOGY CAUSES A STIR

By **JULIE BUNGEI**
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.

LEAD BY EXAMPLE - COUNCIL CHAIR CHALLENGES TU-K PROFESSORS



TU-K Professors and staff pose for a group photo alongside Education CS, Dr Fred Matiang'i and Ministry officials during the academic workshop held in Nakuru.

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



Prof Godfrey Nguru

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.

TU-K SCIENTIST RECEIVES PATENT FOR BIODIESEL INVENTION



Hilton staff pose with TU-K staff after donating used cooking oil for generating biodiesel.



Dr Eric Ogur

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 begun 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.

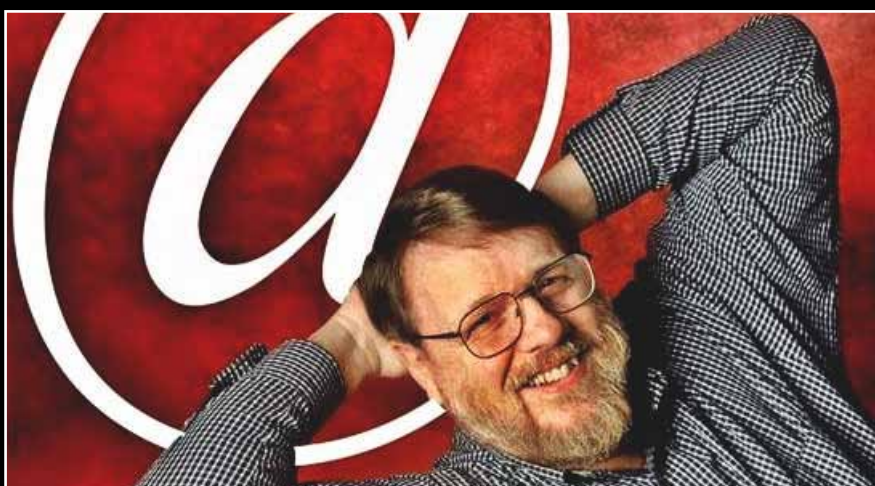
TRANSITION

The man who invented e.mail dies aged 74

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.



TU-K HOSTS LUDWIG QUARTET FROM THE US



Members of the Ludwig Quartet demonstrate proper use of the trumpet



The Technical University of Kenya Vice-Chancellor Prof Francis Aduol receives a trumpet from a member of the Ludwig Quartet. Looking on are TU-K senior staff and other members of the Ludwig Quartet.

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

The quartet gave an astounding performance and recital to TU-K music students and student musicians at the Permanent Presidential Music Commission (PPMC).

(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.

CHAMWADA: JOB MARKET DEMANDS PERSISTENCE, VIGOUR & PERSONAL INITIATIVE

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 lecturer 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



Some of the Journalism students with media personality Alex Chamwada (second left) and TU-K Journalism lecturer Oketch Kendo (Left) shortly after the lecture.

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 Programing.

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.



Media personality Alex Chamwada speaking during the public lecture.

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 begun 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.

Latest signing

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,” Andersson 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.

THE RISE-AND-RISE OF MICHAEL OLUNGA



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



Mr Mark Hubbs, Director at Amatrol demonstrates how the equipment operates to the TU-K team at the Samsung lab.

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.



TVETA Director General Dr Kipkirui Langat consults with DVC - TIP, Prof Suki Mwendwa, during the training at Samsung Hall.



THE TECHNICAL UNIVERSITY OF KENYA

MODULE II PROGRAMMES AT UNDERGRADUATE AND DIPLOMA LEVELS

STARTING SEPTEMBER 2016

THE

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.:**



COURSE TITLE	REQUIREMENTS	DURATION/FEES
FACULTY OF ENGINEERING SCIENCE AND TECHNOLOGY		
SCHOOL OF ARCHITECTURE AND THE BUILT ENVIRONMENT		
Bachelor of Technology (Quantity Surveying)	• Diploma in Technology in Building, Civil, Quantity Surveying or Architecture or • TEP Diploma in Building, Civil, Quantity Surveying or Architecture or Equivalent with at least 2 years relevant work experience	Tuition Ksh.90,000/ per Semester - Duration 6 Sem. Or 7 Semesters for TEP diploma holders)
Bachelor of Technology (Construction Management)	• Diploma in Technology in Building, Civil, Quantity Surveying or Architecture or • TEP Diploma in Building and Architecture KNEC or Equivalent with at least 2 years relevant work experience	
Bachelor of Technology (Building Construction)		
Bachelor of Real Estate	• KCSE Mean grade C+ (Plus) with at least C+ in Maths, English, Geography or Business Studies	10 semesters (Integrated) • Tuition: 90,000/= per sem.
Bachelor of Real Estate	• 3-year Diploma in Real Estate or Equivalent	6 semesters • Tuition: 90,000/= per sem.
Bachelor of Quantity Surveying	• KCSE Mean grade 'C+' (Plus) Maths, Physics, any group III, any group IV, any group V.	10 semesters • Tuition: 90,000/= per sem. (Integrated programme.)
Diploma in Technology (Real Estate)	• KCSE Mean grade 'C' (Plain) with at least C in Maths, English, Geography, Business Studies and any other science subject.	8 semesters • Tuition Ksh.36,000/= per sem.
Diploma in Technology (Quantity Surveying)	• KCSE Mean grade 'C' (Plain) with at least C in Mathematics, Physics/Physical Science, Group III and 2nd Group III or Group IV/V	
Diploma in Technology (Construction Management)		
Diploma in Technology (Building Construction)	• KCSE Mean grade 'C' (Plain) in with at least C in English, Geography, Maths, Physical Science, Physics, or CTI	
Diploma in Technology Architecture	• KCSE Mean grade 'C' (Plain) with at least C in Mathematics, Physics/Physical Science, Group III and 2nd Group III or Group IV/V Or Certificate in Architectural Draughtsmanship and 1 year relevant	8 semesters • Tuition Ksh.36,000/= per sem.

COURSE TITLE	REQUIREMENTS	DURATION/FEES
SCHOOL OF SURVEYING AND GEOSPATIAL SCIENCES		
Bachelor of Philosophy in: • Geoinformation Technology • Surveying Technology	Higher Diploma in: • Surveying Technology • Surveying	4 semesters (Evening) • Tuition: 90,000/= per sem.
Bachelor of Engineering in Geospatial Engineering	• KCSE mean grade of C+ with C+ in Maths, Physics, Chemistry and Biology/Group III/ IV/V	13 semesters (Integrated programme) • Tuition: 90,000/= per sem.
Bachelor of Applied Science in Geo-Informatics	• KCSE mean grade C+ with C+ in Mathematics, Physics, Chemistry, Biology/ any Group III/any Group IV/any Group V.	
Bachelor of Technology: • Geoinformation Technology • Surveying Technology	• Diploma in Technology (Dip. Tech), • Geoinformation Technology • Surveying Technology OR Equivalent • KCSE mean grade C+ with C+ in Mathematics, Physics, Chemistry, Biology/ any Group III/any Group IV/any Group V.	6 semesters • Tuition: 90,000/= per sem.
Bachelor of Science Land Administration	• KCSE mean grade C+ with C+ in Mathematics, Geography, Economics, Biology/any Group III/any Group IV/any Group V.	10 semesters • Tuition Kshs. 90,000 per semester
Diploma in Technology: • Geoinformation Technology • Surveying Technology	• KCSE mean grade of C (Plain) with at least C in Maths, Physics, Chemistry and Biology/ Group III/IV/V, or relevant Certificate in Eng.	13 semesters (Integrated programme) • Tuition: 36,000/= per sem.
SCHOOL OF ELECTRICAL AND ELECTRONIC ENGINEERING		
Bachelor of Engineering in Electrical and Electronic Engineering	• KCSE mean grade of C+ with C+ in Maths, Physics, Chemistry and Biology any Group III/IV/V	13 semesters (Integrated programme) • Tuition: 90,000/= per sem.
Bachelor of Technology in Electrical and Electronic Engineering Technology	• Higher Diploma in Technology (Electrical and Electronic Engineering Technology) • 3-year Diploma in Technology (Electrical and Electronic Engineering Technology) • 3-year TEP Diploma In Electrical and Electronic Engineering with 2 yrs working experience	5 semesters • Tuition: 90,000/= per sem. 7 semesters • Tuition: 90,000/= per sem. 7 semesters • Tuition: 90,000/= per sem.

CONTINUES ...

COURSE TITLE	REQUIREMENTS	DURATION/FEEES
Bachelor of Technology in Electrical and Electronic Engineering Technology	• KCSE mean grade of C+ with C+ in Maths, Physics, Chemistry and Biology/Group III/IV/V	10 semesters (integrated programme) • Tuition: 90,000/= per sem..
Diploma in Technology (Electrical and Electronic Engineering)	• KCSE mean grade of C (Plus) with at least C in Maths, Physics, Chemistry and Biology/ Group III/IV/V or relevant Certificate in Engineering	8 semesters (integrated programme) • Tuition: 36,000/= per sem.
SCHOOL OF INFRASTRUCTURE AND RESOURCE ENGINEERING		
Bachelor of Engineering-Civil Engineering	• KCSE Mean grade C+ with at least C+ in Mathematics, Physics, and English and Chemistry	13 Semesters, Kshs. 90,000 per Semester
Bachelor of Technology-Civil Engineering	• 3-year Ordinary Diploma or Diploma in Civil, Highway, Water Engineering, Building Construction or equivalent	6 Semesters, Kshs. 90,000 per Semester
	• Diploma in Technology Civil Engineering or equivalent	5 Semesters, Kshs. 90,000 per Semester
	• KCSE Mean grade C+ with at least C+ in Mathematics, Physics, and English	10 Semesters, Kshs. 90,000 per Semester
Diploma in Technology – Civil Engineering	• KCSE Mean grade C (Plain) with at least C in Maths, Physics, & Chemistry, or Certificate in Civil or Water Engineering	9 Semesters Kshs. 36,000 per Semester)
SCHOOL OF MECHANICAL AND PROCESS ENGINEERING		
Bachelor of Engineering in Aeronautical Engineering	• KCSE mean grade of C+ with at least C+ in Maths, Physics, Chemistry and Biology/ Group III/IV/V	13 Semesters (Integrated programme) 90,000/= per sem
Bachelor of Engineering (Chemical Engineering)	• KCSE mean grade of C+ with at least C+ in Maths, Physics, Chemistry and Biology/ Group III/IV/V	
Bachelor of Technology in Chemical Engineering	• 3-year Diploma in Technology (Chemical Engineering)	4 Semesters • (Evening)Tuition: 90,000/= per sem
	• KCSE mean grade of C+ with at least C+ in Maths, Physics, Chemistry and Biology/ Group III/IV/V	12 Semesters (Day) 90,000/= per sem
Bachelor of Engineering in Mechanical Engineering	• KCSE mean grade of C+ with at least C+ in Maths, Physics, Chemistry and Biology/ Group III/IV/V	13 Semesters (integrated programme) 90,000/= per sem
Bachelor of Technology in Mechanical Engineering Technology	• 3-year Diploma in Mechanical Engineering Or Equivalent	7 Semesters • (Evening) Tuition: 90,000/= per sem
	• KCSE mean grade of C+ with at least C+ in Maths, Physics, Chemistry and Biology/ Group III/IV/V	10 Semesters (integrated programme) 90,000/= per sem
Diploma in Technology (Mechanical Engineering – Options: • Manufacturing Engineering • Industrial Plant and Energy Engineering • Automotive and Autotronic Engineering • Structural Fabrication and Metallurgical Engineering • Refrigeration and Air Conditioning Engineering: • Mechatronic Engineering	• KCSE mean grade of C (Plain) with at least C in English, Maths, Physics/Physical Science	9 Semesters (Integrated programme) 36,000/= per sem.
Diploma in Technology Aeronautical Engineering		
FACULTY OF APPLIED SCIENCES AND TECHNOLOGY		
SCHOOL OF MATHEMATICS AND STATISTICS		
Bachelor of Philosophy in Technology (Applied Statistics)	• Higher Diploma In Applied Statistics / Actuarial Sciences	4 Semesters • Tuition: 70,000/= per sem.
Bachelor of Science in Mathematics	• KCSE Mean grade of C+(Plus)with C+ in Maths, Physics, Group II/Group III and 2nd Group II/III or Group IV/V	10 Semesters (Integrated) • Tuition: 70,000/= per sem.
Bachelor of Technology in Applied Statistics		
Diploma in Technology: (Options) • Applied Statistics • Actuarial Science	• KCSE Mean grade of C-(Minus)with C- in Maths, Physics, Group II/Group III and 2nd Group II/III or Group IV/V	7 Semesters • Tuition: 36,000/= per sem.
SCHOOL OF COMPUTING AND INFORMATION TECHNOLOGY		
Bachelor of Technology In: (Options) • Computer Technology • Information Technology • Communication and Computer Networks	• KCSE mean grade of C+ including C+ in Maths, Physics, Chemistry and Biology/ Group III/IV/V	10 semesters (Integrated full time) • Tuition: 70,000/= per sem.
Bachelor of Technology In: (Options) • Computer Technology • Information Technology • Communication and Computer Networks.	• 3-year Diploma in Technology or Equivalent	5 semesters (TU-K) 6 Semester (TEP) •Tuition: 70,000/= per sem.
Diploma in Technology In: (Options) • Computer Technology • Information Technology • Communication and Computer Networks	• KCSE mean grade of C- including C- in Maths, Physics	8 semesters • Tuition: 36,000/= per sem.

COURSE TITLE	REQUIREMENTS	DURATION/FEEES
SCHOOL OF PHYSICAL SCIENCES AND TECHNOLOGY		
Bachelor of Technology in Applied Chemistry (Industrial Chemistry)	• 3-year Dip. Tech in Analytical/Industrial Chemistry or equivalent qualification	6 semesters Tuition: KSH70,000/= per semester
	• KCSE Mean grade C+(plus) with C+ in Chemistry and cluster subjects	10 semesters Tuition: KSH70,000 per sem
Bachelor of Philosophy in Technology in Applied Chemistry (Analytical Option) (Evening Only)	• Higher Diploma in Applied Chemistry (Analytical option) or Equivalent qualification.	4 semesters; Tuition: KSH70,000/= per semester
Diploma in Technology in Analytical Chemistry	• KCSE C- (minus) with C- in Chemistry and cluster subjects or Cert. in relevant areas	7 semesters Tuition: KSH36,000/= per semester
Diploma in Technology in Industrial Chemistry		
Bachelor of Technology in Environmental Resource Management	• KCSE mean grade C+ (Plus) With C+ in Maths Geo, Bio, Chem/ Agr/, Physics/ Computer Studies/Business Studies Or A diploma in relevant areas from a recognized institutions	10 semesters (Integrated in full time) • Tuition: 70,000/= per sem.
Bachelor of Technology in Environmental Science	• 3-year Diploma in Technology in Environmental and Resource Management	7 semesters • Tuition: KSH70,000 per sem.
Diploma in Environmental Resource Management	• KCSE mean grade C- (Minus) With C- in Maths, Geo, Bio/Agr/, Chem/Physics, Or a 1-year Certificate in relevant areas from a recognized institution	7 semesters • Tuition: KSH30,000/= per semester
Bachelor of Technology: Technical and Applied Physics	• KCSE mean grade C+ (Plus) With C+ in Maths, Physics, Eng. Chem/Biology	10semesters • Tuition: Ksh. 70,000/= per sem.
Diploma in Technology: Technical and Applied Physics	• KCSE mean grade C- (Minus) With C in Maths Eng.Physics, Chem/ Bio	8 semesters • Tuition: Ksh. 36,000 per sem.
SCHOOL OF BIOLOGICAL AND LIFE SCIENCES		
Bachelor of Philosophy In: • Applied Biology • Biotechnology (Industrial and Medical Options) • Food Science & Technology	Higher Diploma in: • Applied Biology • Biotechnology or Equivalent, • Biological Sciences • Medical and Laboratory Sciences • Food Science and Technology	4 semesters • Tuition: Ksh. 70,000/= per sem.
Bachelor of Technology In: • Applied Biology • Biotechnology (Industrial and Medical Options) • Food Science and Technology	3-year Diploma in Technology: • Applied Biology • Biotechnology or Equivalent • Biological Sciences • Medical and Laboratory Sciences • Food Science and Technology	6 semesters • Tuition: Ksh. 70,000/= per sem.
Bachelor of Technology In: • Applied Biology • Biotechnology (Industrial and Medical) • Food Science and Technology	• KCSE mean grade C+ (plus) With C+ in Bio, Chem, Physics/Maths and Group I/II/III/IV/V	10 semesters • Tuition: 70,000/= per sem.
Bachelor of Science in Biochemistry	• KCSE mean grade C+ (Plus) With C+ in Bio, Chem, Maths/Physics, and group I/II/III/IV	10 semesters • Tuition: 70,000/= per sem.
Diploma in Technology In: • Industrial and Applied Biology • Biotechnology • Biochemistry • Food Science and Technology • Ecology and Conservation Biology	• KCSE C- (Minus) with C- in Maths/Physic, Chemistry and Biology or a Certificate or E quivalent	7 semesters • Tuition: Ksh. 36,000/= per sem.
SCHOOL OF HEALTH SCIENCES AND TECHNOLOGY		
Bachelor of Technology in Community and Public Health	• KCSE Mean C+ (plus) with C+ in English or Kiswahili, Biology, Chemistry and Mathematics or Physics or have A-Levels 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/-
Bachelor of Technology in Community and Public Health	• 3-year Diploma of Technology in Community and Public Health	6 Semesters Tuition – 70,000/- per semester First Aid – 5000/-
Diploma in Community and Public Health	• KCSE Mean C (Plain), with C in English or Kiswahili, Chemistry or Physical Science, Biology or Biological Sciences. C- in Mathematics/Physics and Chemistry/ Physical Sciences. Approved by PHOTC	8 semesters • Tuition: 36,000/= per sem. Training First Aid: 5000/=
Diploma in Technology in Health Records and Information Technology	• KCSE Mean C- (minus), with C- in English or Kiswahili, and cluster subjects or certificate in Health Records and Information Technology or equivalent	
Bachelor of Philosophy in Medical Laboratory Technology	• Higher Diploma in Medical Laboratory Science	4 semesters • Tuition: Ksh. 70,000 per sem.
Bachelor of Technology in Medical Laboratory Technology	• 3-year Diploma in Medical Laboratory Technology	5 semesters • Tuition: Ksh. 70,000 per sem.
Bachelor of Science (Nutrition and Dietetics)	• KCSE Mean C+ (plus), with C+ in Bio, Chem, Physics/Geo/Maths and Group I/III/IV/V	11 semesters (Integrated programme) • Tuition: Ksh. 70,000 per sem.

COURSE TITLE	REQUIREMENTS	DURATION/FEES
Bachelor of Technology in Nutrition and Dietetics	• 3-year Diploma in Technology in Nutrition and Dietetics	5 semesters Tuition: Ksh. 70,000/= per sem
Diploma in Technology Nutrition and Dietetics	• KCSE Mean Grade C (Plain) with C in English or Kiswahili, Maths, Biology and Chemistry, Or Certificate in a related course from a recognized Technical Institution	8 semesters Tuition: 36,000/= per sem
Diploma in Laboratory Technology	• KCSE mean grade C (plain) With C in English/Kiswahili Biology, Chemistry, Maths or Physics	9 Terms (Integrated full time) • Tuition: 24,000/= per term
Bachelor of Science in Medical Laboratory Science	• KCSE Mean C+ (plus), with C+ English or Kiswahili, Biology, Chemistry, Mathematics or Physics	11 semesters Tuition 70,000/= per semester
Diploma Medical Laboratory Science	• KCSE Mean C (plain), with C English or Kiswahili, Biology, Chemistry, Mathematics or Physics (Approved by KMLTTB)	3 years (9 terms) Tuition: 24,000/= per term
Diploma in Pharmaceutical Technology	• KCSE Mean grade C (plain) with C in English or Kiswahili, Chemistry or Physical Science, Biology or Biological Science and Mathematics or Physics. (Approved by PPB)	
FACULTY OF SOCIAL SCIENCES AND TECHNOLOGY		
SCHOOL OF BUSINESS AND MANAGEMENT STUDIES		
Bachelor of Commerce (Options): • Accounting • Finance • Business Management • Human Resource Management • Marketing Management • Logistics and Supply Chain Management • Entrepreneurship • Insurance • Procurement and Supplies Mgt. • Information Systems • Operations Management	• KCSE mean grade of C+ with C in Maths and Eng/Kisw, Any group III, Any group II/2nd group III/any group IV/any group V OR equivalent qualification	10 semesters • Tuition: Ksh. 60,000/= per semester.
Bachelor of Business Commerce	• Higher Diploma (HDip.) in Business Management or Equivalent OR • 3-year Diploma in a Business Course or Equivalent	5 semesters Tuition: Ksh. 60,000/= per semester.
Bachelor of Science in Accountancy	• KCSE mean grade of C+ with C in Mathematics and English/Kiswahili, Any group III, Any group II/2nd group III/any group IV/any group V OR equivalent	10 semesters • Tuition: 60,000/= per semester.
Bachelor of Science in Accountancy	• Higher Diploma or 3-year Diploma in a Business Course or Equivalent OR CPA/CPS Part II or Equivalent	5 semesters for TUK/ KNEC Diplomas, 6 semesters for Diploma from other institutions • Tuition: 60,000/= per semester.
Bachelor of Technology (Business Information Technology)	• KCSE mean grade of C+ with C in Mathematics and English/Kiswahili, Any group III, Any group II/2nd group III/any group IV/any group V OR equivalent	10 semesters • Tuition: 60,000/= per semester.
Bachelor of Technology (Business Information Technology)	• Higher/Advanced Diploma in Information Technology or Computer Science OR • 3-year Dip. Tech. Business Information Technology (BIT), Diploma in Information Technology, Computer Science or Equivalent	5 semesters for TUK Diploma graduates, 6 semesters for Diploma from other institutions • Tuition: Ksh. 60,000 per semester.
Bachelor of Technology in Office Administration and Technology	• Higher Diploma (HDip.) in a Secretarial Studies • 3-year Diploma in a Secretarial Studies or Equivalent.	5 semesters for TUK diploma. 6 semesters for Diploma from other institutions. • Tuition: Ksh. 60,000/= per semester.
Bachelor of Technology in Office Administration and Technology	• KCSE mean grade of C+ with C+ in Mathematics and English/Kiswahili, Any group III, Any group II/2nd group III/ any group IV/any group V OR equivalent qualification	10 semesters (Integrated) • Tuition: 60,000/= per semester.
Diploma in Business Information Technology	• KCSE Mean Grade C (Plain) with D Plain in English, Maths OR Certificate in Information Technology	8 semesters • Tuition Fees 24,000/-
Diploma in Entrepreneurship		
Diploma in Business Studies Options: • Business Administration • Human Resource Management • Sales and Marketing Management • Procurement and Supply Chain Management	• KCSE Mean Grade C-minus with D Plain in English, Maths OR Business Studies/ Commerce/Accounting/Economics OR: • 1-year Certificate in Sales and Marketing (KPUC OR EQUIVALENT) • Advanced Certificate in Supplies Management (KNEC) • Advanced Certificate in Business Administration (KNEC) • 1-year Certificate in Business studies, Certificate in procurement and supply management, • 1-year Certificate in Business studies, Certificate in sales and marketing.	8 semesters • Tuition: Ksh. 24,000 per semester.
Diploma in Accountancy	• KCSE Mean Grade C-minus with D Plain in English, Maths or Business Studies/ Commerce/Accounting/Economics	8 semesters (evening) • Tuition: Ksh. 24,000 per semester.

COURSE TITLE	REQUIREMENTS	DURATION/FEES
Diploma in Office Administration: • Legal Secretarial • Medical Secretarial • Business Secretarial • Foreign Language Secretarial	• KCSE Mean Grade C-minus with D Plain in English, Maths OR Business Studies/ Commerce/Accounting/Economics OR a Certificate in Secretarial Studies	8 semesters (evening) • Tuition: Ksh. 24,000 per semester.
SCHOOL OF INFORMATION AND COMMUNICATION STUDIES		
Bachelor of Science in Information Science	• KCSE mean grade C+ (plus) and at least C+ in Kisw/Eng, Maths, Group II/III and 2nd Group II/III or Group IV/V subjects	10 semesters (Integrated full time) • Tuition: 60,000/= per sem.
Bachelor of Technology in Information Studies	• 3-year Diploma in Technology (Library & Information Technology) or Diploma in Technology (Archive and Records Managements) or Diploma in Information Science	5 semesters (evening) • Tuition: Ksh. 60,000/= per sem.
Bachelor of Technology in Journalism and Mass Communication	• KCSE Mean Grade C+ (plus) and at least C+ in Eng/Kisw, Group II/Maths, Group III and Group II/IV/V	10 semesters • Tuition: Ksh. 60,000/= per sem.
Bachelor of Technology in Journalism and Mass Communication	• 3-year Diploma in Journalism and Mass Communication from TUK or Equivalent.	6 semesters • Tuition: 60,000/= per sem.
Diploma of Technology in Journalism and Mass Communication	• KCSE Mean Grade C- (Minus) and at least C- (minus) in English and Kiswahili,	8 semesters • Tuition: 36,000/= per sem.
Diploma in Technology in:	• Archives and Records Management • Library and Information Technology	7 semesters • Tuition: 36,000/= per sem.
SCHOOL OF SOCIAL AND DEVELOPMENT STUDIES		
Bachelor of Science Counseling Psychology	• KCSE Mean Grade C+ with C+ (plus) Eng/ Kisw, Group II/Maths, Group III, and Group II/IV/V • 3-year Diploma In Counseling Psychology or related discipline	9 Semesters Tution: 60,000/= per sem 6 Semesters Tution: 60,000/= per sem
Diploma in Social Work and Community Development	• KCSE mean grade C- (Minus) with a Pass / C- in Eng, Maths, , any group III/IV/V	7 Semesters • Tuition: 36,000/= per semester
Diploma in Counseling Psychology		
Bachelor in International Relations and Diplomacy	• 3-year Diploma (TUK) Knowledge of French language will be an added	6 semesters • Tuition: 60,000/= per semester
Bachelor in International Relations and Diplomacy	• KCSE Mean Grade C+ (plus) Eng/Kisw, Group III/Maths, Group III, and Group II/ IV/V	10 semesters (Integrated) • Tuition: 60,000/= per semester
Bachelor of Science in Disaster and Emergency Management		
Diploma in International Relations and Diplomacy	• KCSE Mean Grade C- with C in English and a Cluster subject	8 semesters • Tuition: 36,000/= per sem.
Diploma in Disaster Management		
Diploma in Legal Studies	• KCSE mean grade C- (Minus) with C- in English / Kiswahili, History and a Science	7 semesters • Tuition: 24,000/= per sem.
Diploma in Criminology and Security Studies	• Certificate in Criminology. Criminal Investigations, Disaster Management, Criminal Justice OR Crime Prevention or its equivalent	
SCHOOL OF CREATIVE ARTS AND TECHNOLOGIES		
Bachelor of Technology in Design	• KCSE mean grade C+ (plus) and at least C+ in Maths, Group II, Group III, and 2nd Group II/III or Group IV/V and Art and Design (or a portfolio of work).	13 semesters (Integrated in Full time) • Tuition: 60,000/= per sem.
Bachelor of Technology in Design	• 3-year Diploma in Design from TUK or Equivalent.	6 semesters • Tuition: 60,000/= per sem.
Diploma in Technology in Design	• KCSE mean grade C- (Minus) and at least one subject in group I and III. Students to provide portfolios and the University resumes the right to verify.	7 semesters • Tuition: 36,000/= per sem.
Bachelor of Music	• KCSE mean grade C+ and above with at least B in Music and C+ in other cluster subjects (English/Kiswahili, Maths and any Group II or any Group III, any Group II or Group III or Group IV or Group V OR equivalent	10 semesters (Integrated in full time studies) • Tuition: 60,000/= per sem.
Bachelor of Music	• 3-year Diploma in Music from TUK- K OR ABRSM/LCM/ UNISA/LRSM/Trinity College or equivalent.	4 – 6 semesters + 1 IBL • Tuition: 60,000/= per sem.
Diploma in Music	• KCSE C- (minus) with a pass in Music, English, Or Certificate in Music from TUK or any other recognized institution at Credit I and above. Or Grade 5 theory and/ or practical of ABRSM, LCM or equivalent body. Involvement in Music Festivals, Church Music/Gospel Music performance will be an added advantage.	6 semesters + 2 IBL • Tuition: 36,000/= per sem.
Bachelor of Philosophy in Technology (Printing)	• Higher Diploma in Printing Technology	4 semesters • Tuition: 60,000/= per sem. Project Fee: 10,000/-
Diploma in Technology in Printing	• K.C.S.E Mean Grade C- with a Pass in Maths or Certificate in Machine Printing, Print Finishing, Print Origination	8 Semesters • Kshs. 24,000 Per Semester
Diploma in Technology (Fashion Design)	• KCSE Mean grade C- (minus) OR a Certificate in Fashion Design from a recognized institution.	9 semesters (regular/ evening) • Tuition: 36,000/= per sem.

COURSE TITLE	REQUIREMENTS	DURATION/FEEES
SCHOOL OF HOSPITALITY AND TOURISM STUDIES		
Bachelor of Science in Hospitality Management	• KCSE C+ Mean grade and C+ in A-levels or Equivalent: a minimum of 2 principals	10 Semesters KES. 65,000 Tuition Fee per semester. Field Fee:35,000/-
Bachelor of Science in Tourism and Travel Management	• KCSE C+ Mean grade and C+ in Kisw/Eng, Maths, Group II/III and 2nd Group II/III or Group IV/V	10 Semesters KES. 60,000 Tuition Fee per semester. Field Fee:35,000/-
Bachelor of Technology in Tourism and Travel Management	• 3-year Diploma in Tourism and Travel or Equivalent. • A mandatory 2 years relevant industry experience.	5 Semesters: KES. 60,000 Tuition Fees per semester. Field Fee:35,000/-
Diploma of Technology in Tourism and Travel Management	• KCSE C- (minus) Mean grade and C-(minus) in Kisw/Eng, Maths, Group II/III and 2nd Group II/III or Group IV/V or relevant certificate	8 Semesters: KES. 36,000 Tuition Fees per semester. Field Fee: 35,000/-
Bachelor of Technology in Hotel and Restaurant Management	• 3-year Diploma in Technology (Dip-Tech) in Hotel and Restaurant Management from TUK, or equivalent qualification	5 semesters KES. 65,000 Tuition Fee per semester.
Bachelor of Technology in Institutional Catering and Accommodation Management	• 3-year Diploma of Technology in Institutional Catering and Accommodation Management/Diploma in Housekeeping and Office Management from TU-K/KPUC or equivalent	5 semesters • Tuition: 65,000/= per semester.
Bachelor of Science in Event and Convention Management	• KCSE C+ Mean grade and C+ in Kisw/Eng, Maths, Group II/III and 2nd Group II/III or Group IV/V	10 semesters, Ksh. 65,000 Tuition Fee per semester.
Diploma In Technology in Event and Convention Management	• KCSE C- (minus) with at least a pass in Kisw and Eng. and a pass in each of the cluster subjects in KCSE or relevant certificate	8 Semesters: KES. 36,000 Tuition Fees per semester. Field Fee:5,000/-
Diploma in Technology (Dip-Tech) in Hotel and Restaurant Management		
Diploma in Technology (Dip-Tech) in Institutional Catering and Accommodation Management		
Diploma in Housekeeping and Front Office Management	• KCSE C- (minus) with at least a pass in Maths and Eng. and a pass in each of the cluster subjects in KCSE or relevant certificate	8 semesters (day/evening) • KES. 36,000 Tuition and field travels Fees per semester

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 a bank deposit slip of NON-REFUNDABLE APPLICATION FEES of Ksh 2, 000/= paid against the application form REFERENCE NUMBER*.

Selection will be conducted by the Senate. List of successful applicants will be published on university website from where the admission offer letters (calling letter and the joining instructions) may be downloaded. Those given admission offers should submit completed joining instruction together with bank-pay in slip for full fees to the admissions office before registration deadline.

The successful applicants will be expected to pay the **FULL TUITION FEES FOR THE SEMESTER** and the following **statutory fees***: Registration **Kshs. 2,000**; Library **Kshs. 3,000**; Medical **Ksh. 2,000**; Examination **Ksh. 5,000**; Computer **Ksh. 5,000**; Activity **Ksh. 1,000**; Insurance **Ksh. 500**; Student Union **Ksh. 500**; Maintenance **Ksh. 400**; Sports **Ksh. 500**. Refundable Caution Money **Ksh 2,000**. Students participating in attachment shall pay **Ksh. 1,350** IBL 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. 01129006234900 or
Equity Bank: A/C No. 0540290597366

Please QUOTE THE FORM REFERENCE NUMBER while paying the application fees at the bank. The applications 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**.

Halle 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

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TU-K students in the Mechanical Engineering lab



THE TECHNICAL UNIVERSITY OF KENYA

SCHOOL OF GRADUATE AND ADVANCED STUDIES

POSTGRADUATE DEGREE PROGRAMMES

STARTING SEPTEMBER 2016

THE 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:

PROGRAMME	ELIGIBILITY	DURATION
SCHOOL OF MATHEMATICS AND ACTUARIAL SCIENCE		
Master of Science in Applied Statistics	<ul style="list-style-type: none"> a) Second Class honors degree (Upper division) from a recognized university OR b) Second Class honors degree (Lower division) from recognized university and at least two years working experience. The candidate must also have taken at least 12 units in Mathematics in their last two years of undergraduate studies. And have a minimum average of 58% in the Mathematics area of specification, namely Pure or Applied at undergraduate level 	5 semesters
Master of Science in Mathematical Statistics	<ul style="list-style-type: none"> a) Second Class honors degree (Upper division) from a recognized university OR b) Second Class honors degree (Lower division) from recognized university and at least two years working experience. The candidate must also have taken at least 12 units in Mathematics in their last two years of undergraduate studies. And have a minimum average of 58% in the Mathematics area of specification, namely Pure or Applied at undergraduate level. 	5 semesters
Master of Science in Mathematics (Pure or Applied Mathematics)	<ul style="list-style-type: none"> a) Second Class honors degree (Upper division) from a recognized university OR b) Second Class honors degree (Lower division) from recognized university and at least two years working experience. The candidate must also have taken at least 12 units in Mathematics in their last two years of undergraduate studies. And have a minimum average of 58% in the Mathematics area of specification, namely Pure or Applied at undergraduate level. 	5 semesters
SCHOOL OF BIOLOGICAL AND LIFE SCIENCES		
Master of Technology in Applied Parasitology	<ul style="list-style-type: none"> 1st or 2nd Upper Class Honours in Bachelor of Technology in Applied Biology or Science Laboratory Technology OR 2nd Class Honours in the above disciplines with a Postgraduate certificate and 1 year of relevant work experience OR Pass degree with a postgraduate certificate and 2 years of relevant work experience or 5 years of relevant work experience 	5 semesters
Master of Science in Forensic Biochemistry	<ul style="list-style-type: none"> 1st or 2nd Upper Class Honours in Bachelor of Technology, Biotechnology degree, Bachelor of Science in Biochemistry and Bachelor's degree in Biological Sciences. OR 2nd Class Honours in the above disciplines with a Postgraduate certificate and 1 year of relevant work experience OR Pass degree with a postgraduate certificate and 2 years of relevant work experience or 5 years of relevant work experience 	5 semesters
SCHOOL OF PHYSICAL SCIENCES AND TECHNOLOGY		
Masters of Technology in Environmental Resource Management	<ul style="list-style-type: none"> Upper 2nd class Honours Bachelor of Technology degree, BSc in the fields of the Environmental Resource Management/ Agriculture/ or any other related field of study approved by the University Senate. 	2 yrs
SCHOOL OF MECHANICAL AND PROCESS ENGINEERING		
Master of Technology (Mechanical Engineering)	<ul style="list-style-type: none"> Bachelor of Technology in Mechanical Engineering Technology with at least 2nd class honours (Upper Division) or equivalent in related field from any recognized university and approved by Commission for University Education Bachelor of Philosophy in Mechanical Engineering Technology BSc/B.Eng in Mechanical Engineering or its equivalent Higher Diploma with post graduate qualifications. (Pre-Msc) or its equivalent 	
SCHOOL OF BUSINESS AND MANAGEMENT STUDIES		
Master of Arts in Entrepreneurship	<ul style="list-style-type: none"> Upper 2nd honors Bachelor's degree of TU-K; or its equivalent; Lower 2nd class honours Bachelor's degree of TU-K, or equivalent form another university with at least 1 yr relevant experience; 	4 semesters
Master of Business Administration	<ul style="list-style-type: none"> Pass Bachelor's degree and postgraduate diploma or equivalent from TU-K or another university. 	
SCHOOL OF INFORMATION AND COMMUNICATION STUDIES		
Masters of Science in Information and Knowledge Management	<ul style="list-style-type: none"> A Bachelor's degree in Information Sciences, Library Science, Information and Communication Technology, Knowledge Management, Computer Science, Communication and Media Studies, Journalism or Public Relations with at least Upper 2nd class honours. Applicants with a Lower 2nd honours in the above areas must demonstrate at least a 2 yr post qualification experience in the information and knowledge management sector 	4 semesters
Master of Applied Linguistics	<ul style="list-style-type: none"> A Bachelor's degree in Linguistics with at least an Upper 2nd honours; Applicants with a Lower 2nd class honours in the above areas 	4 semesters

PROGRAMME	ELIGIBILITY	DURATION
SCHOOL OF SOCIAL AND DEVELOPMENT STUDIES		
Masters of Science in International Relations	<ul style="list-style-type: none"> Any relevant Bachelor's Degree from TU-K or equivalent from any other institution recognized by Senate 	4 semesters
Masters of Arts in Crisis and Terrorism Studies	<ul style="list-style-type: none"> Any relevant Bachelor's Degree from TU-K or equivalent from any other institution recognized by Senate 	4 semesters
SCHOOL OF CREATIVE ARTS AND TECHNOLOGIES		
Master of Music in Music Education or African Music Studies	<ul style="list-style-type: none"> Upper 2nd honors Bachelor's degree of TU-K; or its equivalent; Lower 2nd class honours Bachelor's degree of TU-K, or equivalent form another university with at least 1 yr relevant experience; Pass Bachelor's degree and postgraduate diploma or equivalent from TU-K or another university. 	4 semesters
Master of Musical Arts in Composition or Performance		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.

The application form should be accompanied by copies of ACADEMIC CERTIFICATES, ID CARD and a bank deposit slip of NON-REFUNDABLE APPLICATION FEES of Ksh 2, 000/= paid against the application form REFERENCE NUMBER*.

Office of the Registrar (Academic Affairs) MASTERS' DEGREE PROGRAMMES FEES STRUCTURE (KSHS)

DESCRIPTION	YEAR 1	YEAR 2	YEAR 3	TOTAL
1. TUITION FEES				
Group I	260,000	260,000	-	520,000
Group II	170,000	170,000	-	340,000
Group III	236,000	236,000	-	472,000
Group IV	189,000	189,000	-	378,000
2. STATUTORY FEES				
Registration	2,000	2,000	-	4,000
Insurance	500	500	-	1,000
Sports	500	500	-	1,000
Maintenance	400	400	-	800
Library	2,000	2,000	-	4,000
Medical	2,000	2,000	-	4,000
Computer	2,000	2,000	-	4,000
Thesis Examination	17,500	17,500	-	35,000
Caution money (refundable)	2,000	-	-	2,000

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. Fees shall be subject to review and approval by the university.

Fees should be paid at any branch of the following bank accounts using the indicated account number:

Account Name: Technical University of Kenya
Cooperative Bank: A/C No. 01129006234900 or
Equity Bank: A/C No. 0540290597366

Application deadline: 3rd June 2016.

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EDUCATION AND TRAINING FOR THE REAL WORLD



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Education and training for the real world

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