

TU NEWS

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May - August 2016

TU-K GEARS UP FOR PRODUCTION



CHESS SENSATION:

Joyce Nyaruai, a TU-K Third Year Engineering student qualifies alongside other nine chess players to represent Kenya in the global event to be held in September 2016 in Baku, Azerbaijan.





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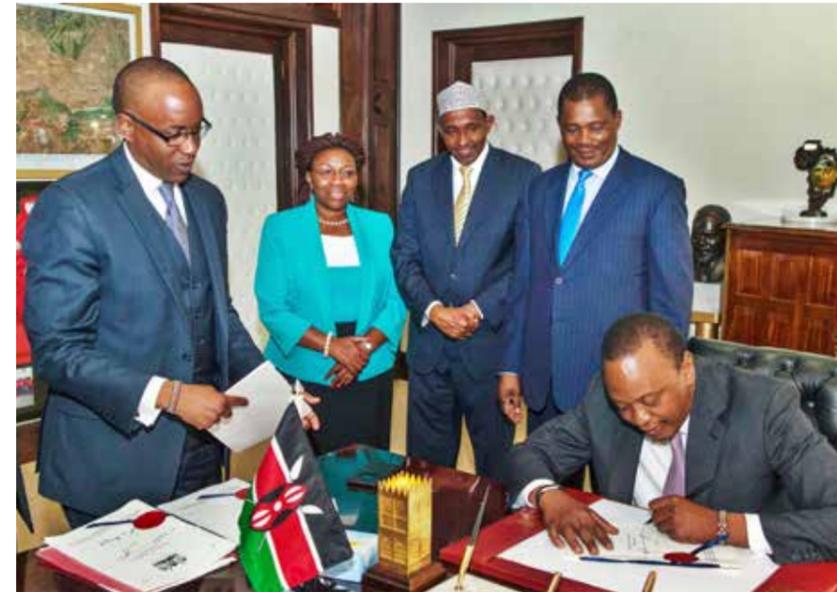
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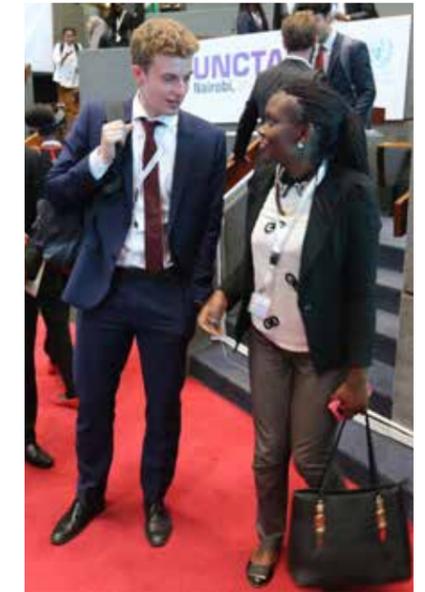
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FROM THE VICE-CHANCELLOR

I wish to take this opportunity to warmly welcome the First Year students who have joined the Technical University of Kenya. Your decision to join this great institution will definitely change your future forever. The experience and knowledge you will gain while here will define your future social and career prospects in a way you may never have imagined. As a student, you will learn skills and get to interact with other students and lecturers from all parts of Kenya and get to meet others from other countries, races and backgrounds.

As a student, you are expected to take charge of your time and exercise the highest level of self discipline. This is the only way you will succeed and graduate at the end of your course within the given time limit.

I also would like to wish the members of staff and faculty a happy and prosperous 2016/2017 academic year. The brand new academic year gives us yet another opportunity to serve humanity and help propel our country to greater heights of development. To achieve our targets, more effort and focus is therefore required from us all in whichever capacity we are working.

The recent signing into law the Engineering Technology Act 2016 by His Excellency the President opens a new chapter in the professional development of our graduates.

The Bill provides for the regulation, practice and standards

of engineering technologists and technicians. It also outlines the requirements to be fulfilled when applying for a practising licence and requires engineering technologists and technicians to obtain licences before they can practice. Through the Act, an Engineering Technologists and Technicians Registration Board will be established to, among other things, issue licences to qualified persons. These are developments our graduates and others from elsewhere are rejoicing about because, for the first time, technologists and technicians are having a regulatory body. This will give the profession a higher profile in the country's economic development.

I am glad to note that we recently trained 20 members of staff who will be involved in the use of Computer-Based Chemical Inventory Management System (CIMS). The move is set to shift the university from the traditional way of chemical handling and operations that is paper-based to computer-based, an international standard that guarantees safety and monitors security risks.

As a university, we are proud that a Third Year student, Joyce Nyaruai (Electrical and Electronics Engineering Major) is among the nine that qualified to represent Kenya during the 42nd Edition of Chess Olympiad, a global event that kicks off in September this year in Baku, Azerbaijan. The event will bring together participants from more than



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

150 countries. Nyaruai's Chess exploits is commendable because it has confirmed that, apart from academic work, students can still engage in hobbies that may end up changing their career paths forever and bring fame to TU-K and the country at large. We wish her the best of luck.

In addition, TU-K students are doing very well on the innovations front. As narrated in this issue, our students have come up with innovations that, if well harnessed and commercialised, will offer solutions to a myriad societal challenges and also improve the inventors' own economic fortunes. I wish to emphasise that TU-K Council and Management will continue supporting student innovations and entrepreneurship ideas in line with our motto: Education and training for the real world.

TU-K LEADS IN COMPUTER-BASED CHEMICAL MANAGEMENT SYSTEM



Geoffrey Otieno during the training session at TU-K's Samsung Lab.

In line with Technical University of Kenya's quest to maintain the highest global standards in its operations, the institution recently trained 20 of its employees who handle chemicals on the use of Computer-based Chemical Inventory Management System (CIMS).

The move is set to shift the University from the traditional way chemical handling and operations that is paper-based to computer-based, an international standard that guarantees safety, and monitors security risks. This involves setting up measures that stringently minimises access by unauthorised persons and ensures quick management and references.

According to TU-K Chemical Science and Technology Head of Department Dr Austin Ochieng, the training, which was held at the University's Samsung Lab, is the second in a continued process

to ensure that the University is compliant.

"International standards of chemical handling now call for safety and security of chemicals either in learning and research institutions, industries or at any other point," noted Dr Ochieng.

Some chemicals that may be accessed by unauthorised persons can be combined to make deadly explosives. Dr Ochieng indicated that computer-based chemical management ensures high security for sensitive chemicals as well as regulated access and control.

"The traditional paper-based

Computer-based chemical management ensures high security for sensitive chemicals as well as regulated access and control

chemical management gives limiting factors such as minimal security and easy access as well as marginal warning on the hazardous state of individual chemicals; also, the computer-aided management can be done online and handlers can quickly tell the chemical component type and quantity," added Ochieng.

The four-day training programme was held in collaboration with Chemical Security Program (CSP) and TU-K and was sponsored by the US State Department. Also present were officials from the Kenya Chemical Society (KCS).

Some of the key areas of training were chemical inventory management system installation, set-up, access control and audit, barcodes and barcode readers and scanners, standard operation procedures, chemical reception, and best practice on storage and retrieval.

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Technical University of Kenya



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PRESIDENT SIGNS ENGINEERING TECHNOLOGY BILL 2016



President Uhuru Kenyatta signs the Engineering Technology Bill 2016 as Solicitor General, Njee Muturi, Bomet Woman Rep, Hon. Cecilia Ngetich, Leader of Majority in the National Assembly, Hon. Adan Duale and National Assembly Speaker, Hon. Justin Muturi looks on.

It was a sigh of relief for The Technical University of Kenya students and the engineering fraternity in general, after President Uhuru Kenyatta assented to the Engineering Technology Bill 2016.

The President signed the bill at State House in the presence of the Speaker of the National Assembly Justin Muturi, Head of Public Service Joseph Kinyua, Clerk to the National Assembly

Justin Bundi, Majority Leader in Parliament Aden Duale, Bomet Women Representative Cecilia Ngetich and Solicitor General Njee Muturi.

The Engineering Technology Act 2016 provides for the regulation, practice and standards of engineering technologists and technicians.

Bachelor of Technology in Engineering graduates and those pursuing diploma courses in allied

engineering fields have over the years been frustrated by lack of a relevant regulatory board. The Engineers Board of Kenya (EBK) only registers and regulates graduates holding Bachelor of Science in engineering degree yet the discipline has other cadres of workers that play a critical role in the profession. The technicians, technologists and crafts persons are the ones who bring to life the designs by engineers. They are



President Uhuru with the Sponsor of the Bill Hon Cecilia Ngetich display a copy of the signed Bill



TU-K Engineering students during a practical session

Members of the Board will have unfettered powers to enter and inspect business premises for verification purposes and for monitoring works, services and goods rendered by professional engineering technologists.

the ones who do the actual work of engineering while engineers only design and supervise. This makes it very important that anyone practising any aspect of engineering must have a sound background and ascribe to professional standards set and monitored by a regulatory body.

The new bill outlines the requirements to be fulfilled when applying for a practising licence and requires engineering

technologists and technicians to obtain licences before they can practice.

Through the Act, an Engineering Technologists and Technicians Registration Board will be established to, among other things, issue licences to qualified persons.

The Board will have power to enter and inspect sites where construction, installation, erection, alteration, renovation, maintenance, processing or manufacturing works are in progress to verify that engineering professional services and works are undertaken by registered persons under the Act. The Board will also ensure standards and professional ethics and relevant health and safety aspects are observed in line with Occupational Safety and Health Act, 2007.

Members of the Board will have unfettered powers to enter and inspect business premises for verification purposes and for monitoring works, services and goods rendered by professional engineering technologists.

The Board will have power to recommend for the suspension of any engineering technology professional services, works, projects, installation process which are done without meeting the set standards. It will also set standards and conduct professional examinations for the purpose of registration where applicable.

Bomet Women Representative Cecilia Ngetich was the face of the struggle in Parliament as she pressed her colleagues in the August House to accept and approve the bill. The late Prof Wilson Ogola and Prof George Thumbi (both of TU-K) played a central role in conceptualising and drafting of the contents of the bill before it got into Parliament.

CARNEGIE AFRICAN DIASPORA FELLOWSHIP PROGRAM TO SUPPORT 57 PROJECTS IN AFRICA

The Technical University of Kenya (TU-K) has been selected by the Carnegie African Diaspora Fellowship Programme (CADFP) to host an African Diaspora scholar to work on a collaborative project on strengthening the newly co-developed curriculum for the Bachelor of Technology in Medicinal Chemistry. The scholar is expected to help in making the programme practically oriented to produce graduates with extensive hands-on experience.

This is in line with TU-K's motto of "Education and Training for the Real World". In this endeavour, Professor Rachel Ndonge, a Fellow from Montgomery College, Rockville, Maryland, USA, together with members of the Department of Chemical Sciences and Technology, will design and incorporate relevant practical experiments in line with international best practices, taking into account local market demands and expectations. In addition, she will facilitate the adoption and utilisation of various instructional delivery methods that are meant to increase student engagement and participation that are tolerant to the diversity of students' needs; that motivate students; and that allow students to develop critical thinking and problem solving skills.

The scholar will also participate in the mentorship of female students at the TU-K in matters science and technology. Professor Paul Shiundu, the Deputy Vice-Chancellor (Academics, Research and Students), will lead the project

The impact of the collaboration



Prof Paul M. Shiundu

on campus and the community shall include, a co-developed four - year curriculum for B. Tech. in Medicinal Chemistry that is practically oriented and relevant to the needs of the labour market with well-defined programme objectives and learning outcomes.

TU-K will improve its teaching methodologies among teaching and technical staff in pedagogical skills and student-centred approaches to teaching and learning. The university will have an operational inquiry-based experiments for the B.Tech in Medicinal Chemistry programme; strengthen its outreach activities and have a

TU-K has improved its teaching methodologies among teaching and technical staff in pedagogical skills and student-centred approaches to teaching and learning



Prof Rachel M. Ndonge

robust industrial attachment programme where proper partnerships are established between TU-K and relevant industry players. The university will expanded cultural and educational opportunities connecting learning and discovery with the needs and priorities of the communities that TU-K serves. The expansion of the university's portfolio to cover training of technologists as well as fully-fledged professionals in specialised programmes with a strong practical component to ensure that its graduates are well prepared for the world of work in line with the institution's motto of "Education and Training of the Real World"

TU-K will be able to nurture networks and create champions for outreach as an integral part in positively influencing female students in high schools to pursue science-based programmes.

This is one of 57 projects that will pair African Diaspora scholars with one of 41 higher education

institutions and collaborators in Africa to work together on curriculum co-development, research, graduate teaching, training and mentoring activities in the coming months. Professor Ndonge is one of the 169 African Diaspora scholars who have been awarded Fellowships to travel to Africa over the first three years of the programme. The project spans all disciplines from agroforestry to e-learning modules for nursing, and from ethnomusicology to military mental health.

This innovative fellowship programme facilitates engagement between scholars born in Africa who are now based in the United States or Canada and scholars in Africa on mutually beneficial academic activities. The programme is managed by the Institute of International Education (IIE) in collaboration with United States



Inside a chemistry lab



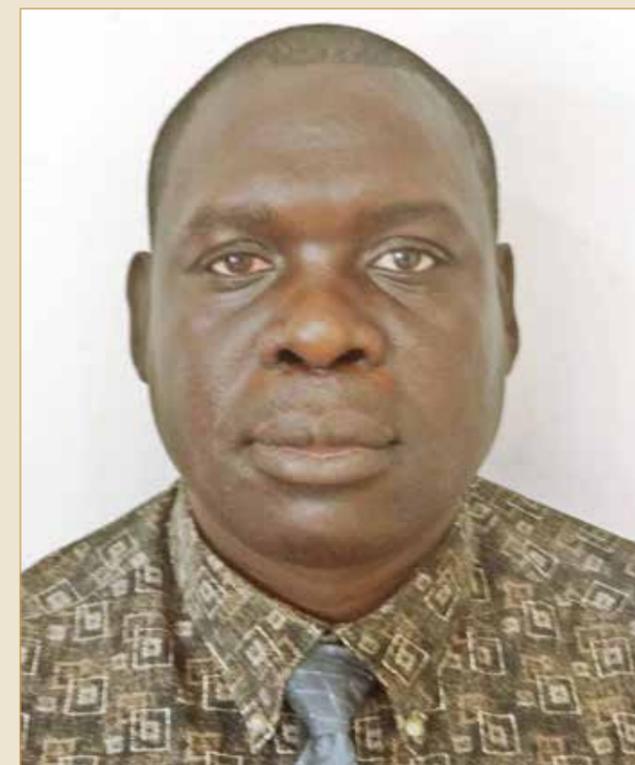
Products of medical chemistry

International University-Africa (USIU-Africa) in Nairobi, through Dr Paul Tiyambe Zeleza, who chairs the Advisory Council, and is funded by Carnegie Corporation of New York.

The Carnegie African Diaspora Fellowship Programme (CADFP) Advisory Council, comprised of academic leaders from Africa

and prominent African Diaspora academics, has embarked on quick growth, quality, impact and uniqueness of the program, which allows African universities to take the lead in proposing projects that meet their needs and hosting African Diaspora scholars at their institutions

Fulton Fellowship Award



Dr George Okwadha

TU-K SCHOLAR WINS ACU TITULAR FELLOWSHIP '2016

The Chairman Department of Civil and Construction Engineering, Dr George Okwadha (left) has been awarded the ACU Swansea University (United Kingdom), Fulton Fellowship. Dr Okwadha will carry out research on determination of Pozzolan activities of leguminous crop plants, to be used as partial replacement of cement in concrete manufacture. He will work in Collaboration with Dr Clare Wood of the College of Engineering, Swansea University. The research is unique in that it will reduce overdependence on cement as a concrete making material, therefore reducing construction costs.

SIX EASY WAYS TO SOLVE THE ACCREDITATION SAGA

A friend once asked me to help her identify a post-Diploma Undergraduate programme in Civil Engineering. Having looked at her technical background and working experience, Bachelor of Technology was ideal. "Will this B.Tech qualification lead to accreditation?" Tough question, but my personal observation was, "You do not join university to seek accreditation, but to acquire skills and knowledge."

According to the Concise Oxford English Dictionary, Luxury Edition, to "Accredit" is to "Give official authorisation or recognition to," or "to authorise (a diplomat or journalist) to be in a place or to hold a post." In the context of our discourse, Accreditation is the formal authorisation issued to a trained individual or an entity to the membership of a professional body. In Kenya, there are various professional bodies that induct professionals like engineers, architects, quantity surveyors, journalists, lawyers, accountants, public relations practitioners, physicians, scientists, among others.

Accreditation is vital to the way of doing business. In fact, it helps to improve the quality of life by placing checks and balances on major processes and engagements. The control measures facilitated by these professional bodies ensure disasters are prevented and crises resolved. Accreditation regulates the design, implementation and completion of crucial development projects in the public and private sectors, and ensures the stipulated standards are met every step of the way. It instils the much-needed discipline and ethical standards amongst practitioners.

However, accreditation to professional bodies has lately stunted many universities in Kenya, leaving students disenfranchised and misinformed. Sadly, students have been preconditioned to lay emphasis on accreditation at the expense of the actual delivery of the university curricula. Furthermore, the hard-line stance taken by the accreditation bodies has only but perpetrated uncertainty and panic amongst students, and has stirred up the hornet's nest, eventually leading to student unrest, indefinite suspension of teaching and learning, and such extreme measures as closure of the affected institutions.

During recruitment, employers outline the scope of the job in question by first asking for the academic qualifications of the applicants, followed by the requisite working experience. Then and only then, do they ask for membership to respective professional bodies, albeit as an added advantage. The order of these requirements cannot be reversed. This is quite telling as to where stakeholders' priorities lie in higher education and professional training.

There are professionals trained in various areas of specialisation that have no accreditation bodies to associate with, but when assigned duties or consultancy contracts, never disappoint. These individuals rely on their academic qualifications, flawless workmanship, impeccable creativity and attention to detail, and without looking up to any professional body, they have their ultimate output widely celebrated.

All said and done, below are easy proposals, which if implemented, will go a long way to ease the accreditation stalemate, for the good of our students, and for sound development of the crucial areas of national concern. Some of these criteria may already be in place, but follow-up and enforcement is key.

There are professionals trained in various areas of specialisation that have no accreditation bodies to associate with, but when assigned duties or consultancy contracts, never disappoint.

1. Peer Mentorship

In every accreditation body, members are classified by area of expertise, academic qualification and professional experience. There should be an arrangement where the senior and more experienced members of a professional body are assigned and expected to develop new talent by mentoring the newly-inducted or yet-to-be-inducted members, and sharing professional knowledge and experience for posterity. To encourage peer mentorship, the senior members should then be allowed to use their mentorship track record to raise their profiles.

2. Clear-cut Mandates

There is need for definition of roles according to every entity's core business. For instance, teaching, learning and research are the responsibility of universities and colleges. The accreditation bodies, while exercising their mandate, should let the Senates and Academic Boards of the institutions to develop curricula. It is

important to have these accreditation bodies weigh in on these curricula as stakeholders at every stage of curriculum development and review. They should not be seen to antagonise universities or disallow graduates from practice, but offer timely corrective measures to areas of deficiency. When tension, grandstanding and the usurping of each other's roles take centre stage, there is bound to be student unrest. The Commission for University Education (CUE) is a very important player in curriculum development and higher education in general, and as such, should be the superior accreditation body for academic programmes. Sadly, some accreditation bodies have been quick to disregard the academic programmes that have been duly accredited by the CUE. In that case, the Government should intervene to separate these roles.

3. Entrance Examination

World over, certification is the easiest and most straightforward way to test a professional's mettle and aptitude. Upon satisfaction of the University's Senate and Board of Examiners' requirements, a graduate should be subjected to properly outlined and moderated entrance examinations by the relevant accreditation body. Moreover, this is the most appropriate yardstick to gauge the credibility of the graduate and that of the corresponding learning institution and curriculum. The structure of the entrance examination should be elaborate, with different phases that incorporate written tests, Presentation and Exhibition, and Practical examinations with specific emphasis on real-world projects where appropriate, in conjunction with industry. A student who meets the stipulated requirements and satisfies the board, should therefore, not be judged by their respective training institution.

4. Inclusivity

There is need to establish an association of all industry players, as far as accreditation to a given professional body is concerned. The Commission for University Education should steer this, and constitute membership from the institutions, employers' associations and the professional bodies. Further, this umbrella body should constitute the various subcommittees to take charge of reviewing the accreditation process of their respective areas of specialisation. During curriculum development, the accreditation bodies, through these subcommittees, should weigh in, as far as industry trends and demands are concerned. The Government needs to extend its goodwill to facilitate the setting up of the

joint board, with a view to build consensus.

5. Review of Licenses

The accreditation process should implement and enforce identification mechanisms, licensing of professionals, and revoke the same, should need arise. This license should be renewable, and its use subjected to stringent conditions to guard against professional negligence or unprofessional conduct. Any projects handled by the licensee must be above board and the licensee's reputation subjected to periodic appraisal.

6. Apprenticeship and Internship

Most of the members and decision makers in the accreditation bodies are employers, directors or senior managers in various organisations in the public and private sectors, and international public organisations. With sufficient goodwill, these individuals can use their influence to steer the accreditation process to success. Most universities have now made it mandatory for students to go on internship during their studies. A perfect example is The Technical University of Kenya, which has earmarked at least two semesters for internship, popularly known as the Industry-Based Learning

A student who meets the stipulated requirements and satisfies the board, should therefore, not be judged by their respective training institution.

(IBL), in which learners are given an opportunity to gain real-world experience. This concept could not have borne fruit without the support of the employers and other industry players. To prevent the accreditation policy from being punitive and disadvantageous to some students, the accreditation bodies should provide avenues for

graduates to return to industry for post-qualification and pre-employment experience. The accreditation bodies should themselves institute mechanisms to assess the progress of the apprentices before formal induction into membership of the professional bodies.

Parting Shot

This article should not be interpreted to belittle the importance of accreditation. The Engineers Act 2012 offers great insights and benchmarks for accreditation into the engineering profession, and the recommendations above share the same school of thought. The part of the Board's mandate that includes setting up a School of Engineering and the Kenya Academy of Engineering and Technology to advise the National and the County Governments on policy matters relating to engineering and technology, is worth embracing.

– Alex Wamonje is an employee of the Technical University of Kenya

AKUNO ATTENDS STOCKHOLM MUSIC AWARDS



Ian Smith (left) Chair of the Board of the European Music Council, with Prof Emily Achieng' Akuno (centre) Professor of Music and Executive Dean, Faculty of Social Sciences and Technology at the Technical University of Kenya and Treasurer, International Music Council) and Sir Roger Gifford (right) UK Head of SEB, Chairman of the English Chamber Orchestra and the City Music Foundation).

Prof Emily Akuno, the Executive Dean, Faculty of Social Sciences, attended this year's Polar Talks held at the Culture House, Stockholm, Sweden. The Polar Talks organised by The Polar Music Prize, is an international series of inspiring talks and lectures on cutting-edge topics. Artists, scientists, creatives and opinion makers coalesce around the central theme of "The Power of Music".

The 2016 Polar Music Prize was awarded by H.M. King Carl XVI Gustaf to renowned Swedish song writer Max Martin and celebrated Italian operatic coloratura Mezzo-Soprano Cecilia Bartoli at the Concert House in Stockholm, Sweden on 16th June 2016. This year marks the 25th anniversary of the prize that has honoured, among others, Quincy Jones, Pink Floyd, Peter Sellars,

Ray Charles, Ravi Shankar, B. B. King, Youssou N'Dour and Stevie Wonder.

It is one of the most prestigious and unique music prizes in the world, celebrating the power and importance of music. It is awarded to individuals, groups and institutions for international recognition of excellence in the world of music. Started in 1989 by the late Stig Anderson, the prize is managed by Marie Liden, Anderson's daughter.

The award ceremony was held on Wednesday 15th June by Polar Talks and was held at the Culture House, Stockholm. The talks comprised of lectures, panel

This year's talks included a panel discussion on access to music education, support, funding and the engagement of the private sector

discussions and interviews, with speakers and topics drawn from the music world of technology, science and education, looking into latest trends within music and creativity. This year's talks included a panel discussion on access to music education, support, funding and the engagement of the private sector, in what went on to articulate the need for concerted efforts to avail quality music learning opportunities so that excellence and quality are nurtured, while participation is assured for the success of music education.

The not-to-be-missed talks focused on some of the myriad ways that music can produce powerful outcomes across a range of social, artistic and scientific disciplines. Music has the power to change the world and the Polar Talks inspires all who attend to do just that.

TIME IS RIPE FOR LOCAL FILM CONTENT

Graduates in creative arts now have ripe ground to produce fresh local film content that is on high demand in Kenya and internationally.

Digital migration, technology penetration in Kenya as well as local film industry capacity building is opening up and reshaping the film environment for the youth to explore their talents and make a living. This is according to Kenya Film Commission CEO, Miss Lizzie Chengoti

"Fresh African content is most sought after by international players, it is our sole responsibility to take up the opportunities we have to tell our 'African Story' through our own narrative," the CEO said.

Ms Chengoti was speaking to Communication and Media students from eight universities during the 6th edition of the 'Campus Film Symposium' held at the Technical University of Kenya auditorium. The event was an initiative by the publishers of Film Kenya Magazine. The three-day film screening event was organised by FilmVue, in conjunction with TU-K's Department of Journalism and Media Studies.

Ms Chengoti also noted that the Government is putting up pillars to support film industries that include capacity building for independent film makers and asked the students to enroll in professional film and arts associations that give them a stepping ground to the industry once they graduate.

"As we market the country as a film destination, we have realised that there is a shortfall in cast and crew talent in Kenya and thus it is critical to reinforce that you are pursuing an important career," She said.



Kenya Film Commission CEO, Ms Lizzie Chengoti speaking during the symposium's opening ceremony at TU-K

"Since the current Kenyan legislation calls for 60 percent of content on television shows as well as 40 percent of advertisements to be local, there is a need to develop new and fresh content by locals in order to reduce the amount Mexican, South African and Nigerian content that has long

"There is a need to develop new and fresh content by locals in order to reduce the amount Mexican, South African and Nigerian content that has long reigned supreme in local Kenyan stations."

reigned supreme in local Kenyan stations," she added.

At the same time, event organiser Mr Eddy Irura said that the symposium aims at establishing a film culture among students. "We want to

cultivate a tangible passion for local content delivery, the incorporation of industry players in the programme through group discussions and presentations enables networking and career development potential for film and media students, said Mr. Irura.

The Chair of the Department of Journalism and Media Studies Dr Joyce Omwoha, welcomed participants to TU-K and called for concerted efforts by all film industry stakeholders to ensure content production meets local and international standards.

"The vision behind this campus based programme is to tap into the vibrancy and creative minds of students looking to venture in Film and TV production by providing an opportunity for interaction and appreciation of the art that is storytelling," she said.

The symposium ran for three days and culminated in a 60-hour film challenge.

REMEMBERING PROFESSOR WILSON OGOLA



The late Prof Wilson Ogola

Prof Wilson Ogola, a tenacious researcher, committed educator and engineer in the Department of Mechanical Engineering died suddenly at his home in Nakuru on July the 19th aged 59.

Prof Ogola, who was also the National Chairman of Technical and Vocational Education and Training Authority (TVETA), and the Director, University- Industry Partnerships, was as an accomplished scholar in the area of Mechanical Engineering and was a family man who loved his wife and children dearly.

Stunned colleagues at TU-K spoke of Professor Ogola's intelligence, calmness, and commitment to bettering the university.

"Prof Ogola was a valuable member of the TU-K family for 6 years, and we are deeply saddened to learn of his death," said Prof Muumbo who is the Dean Faculty of Engineering Science and Technology. He was dependable man and true to his word. He worked tirelessly to ensure that both students and staff of engineering found purpose in their daily engagements. His contribution to the development of the Kenya Engineering Technicians and Technologists Act was selfless to say the least," added the Dean.



Prof Wilson Ogola (3rd right) with Deputy President (in white shirt).

Prof Ogola joined TU-K as an associate professor in 2010 and was promoted to full professorship in 2015. He taught various courses in the Department of Mechanical and Mechatronic Engineering

Dr Eric Ogur, the Director, Centre for Engineering, Innovation and Production, described Prof Ogola as a frontline soldier who championed technology programmes at the university and in the country that are now handy in building self-dependence and industrialisation through innovations and technology start-ups.

"He wore on his sleeve a solid hand in growing technology and innovations, he was a hard worker and a man who ensured everything on his docket was done well," Dr Ogur said.

Dr Ogur also noted that Prof Ogola played a key role in putting together the Engineering Technologists and Technicians Bill set up a regulatory body housing the engineering technologists, technicians and craft persons in Kenya. The bill is currently going through the National Assembly procedures before accented by the President.

Kenya Technical and Vocational Education and Training Authority (TVETA) Director General Dr Kipkirui Langat, described Prof Ogola as a mentor to several scholars and those he interacted with ensuring they achieve their potential.

"Prof, it is sad that you are no more. You have been a mentor to many and you sacrificed a lot to ensure everyone who passed through your hands achieved his or her potential. Although you are gone, we will never let your spirit die," Dr Langat wrote on his Facebook page.

Prof Ogola was an associate member, Institute of Mechanical Engineers - UK, Engineering Council, Kenyan Society of Agricultural Engineers and the Association of Medical Engineers (Kenya).

He had scholarly interest in the area of Mechanical Engineering (composite materials) and Mechatronics Engineering and was honourable Secretary at the Institution of Engineering Technologists and Technicians.

Prof Ogola is survived by his wife, Scholastica Otieno, his sons, Kenneth, Stephen, and Peter; and his daughter, Mercy.

He was laid to rest at his rural home in Migori County on August 5, 2016. He will be dearly missed by the entire TU-K Community. May his soul rest in eternal peace.



Prof Ogola carries the Mace during a graduation ceremony



Prof Ogola leads TU-K senior staff in receiving science equipment from ADB



Prof Ogola (left) present a report to the VC, Prof Francis Aduol

HOW MOBILE PHONES ARE DISRUPTING TEACHING AND LEARNING IN AFRICA

By Gina Porter Senior Research Fellow, Durham University



Children playing on a phone

Mobile phones have become ubiquitous in Africa. Among younger users, basic phones are most common. But more pupils are accessing smartphones that can connect to the internet – and taking them along to school.

Phones are often used in school whether they're allowed or not. Although they can enable valuable access to information, they also bring new responsibilities and dangers. It's remarkably common for classes to be interrupted by both pupils' and teachers' phones. Access to pornography as well as bullying and harassment through

phones is widely reported.

We have conducted a study of young people's mobile phone use in Ghana, Malawi and South Africa. Our findings emphasise the central place that mobile phones occupy in many young people's lives. Before the mobile phone arrived in Africa, few people had access to landlines. The mobile phone represents far more of a

Mobile phones have many benefits. But they can also interrupt classes and distract

communication revolution in Africa than in richer countries.

Researching phone stories

The study, involving a group of university researchers from the UK and Africa, was funded by the UK's Economic and Social Research Council and Department for International Development. It covers many aspects of young people's phone use, from generational relations to job searches and health advice. Use in school has emerged as a leading issue, echoing concerns around the world.

We conducted more than 1,500 face-to-face interviews and focus

groups with young people, teachers, parents and key community members across 24 locations – eight in each country. These varied from poor city neighbourhoods to remote rural hamlets.

We followed this up with a questionnaire to about 3,000 young people aged between nine and 18 and 1,500 young people aged between 19 and 25 in the same 24 locations.

The survey of children aged nine to 18 years shows that mobile phone use is much higher than ownership figures might suggest. Ownership of phones was lowest in Malawi, the poorest of the three countries. Here only 8% of children in the survey owned their own phone, compared with 16% in Ghana and 51% in South Africa. Nonetheless, in Malawi 35% of children said they had used a phone in the week before the survey. In Ghana the figure was 42% and in South Africa it was 77%. Children often borrow phones from each other, their parents, other family members and neighbours.

Children's use of phones

Some pupils, particularly in South Africa, use their phones to access sites like Master Maths for help with homework. But the positive benefits mostly seem to be limited to mundane tasks such as contacting friends to check on homework or using the phone as a calculator. Much information from pupils and teachers was more negative: academic performance affected by disrupted classes – due to teachers as well as pupils using their phones – disrupted sleep because of cheap night calls, time wasted on prolonged sessions on social network sites, and harassment, bullying and pornography.

Class disruption from pupils' phones used to be mostly from ring tones when calls were re-

ceived. Now, for those with smartphones, messaging on WhatsApp or checking Facebook have become common classroom activities. Teachers' phone use in class can be equally disruptive, as some teachers admitted. A call comes in, or they make a call, and whether they step outside or take the call in class, the end result is that the lesson is interrupted and – as more than one told us – “You forget what you are going to deliver.”

In Malawi, 60% of enrolled pupils said they had seen their teacher using a phone in lesson time during the week before the survey. The corresponding figure for Ghana was 66% and for South Africa 88%. Pupils are rarely given such an opportunity to comment

Pupils need reminders not to publish personal information on the internet and to tell their teacher, a parent or carer if they access any info that worries them.

on the behaviour of those in authority over them but even if not all were truthful, these figures are of concern. Many head teachers also spoke about the problem of teacher phone use, saying they found it difficult to regulate.

Other problems include disturbing levels of pupil bullying and harassment. In the survey of enrolled pupils who use a phone, 16% in Ghana, 28% in Malawi and 55% in South Africa said they had received unwanted, unpleasant or upsetting calls or texts. This was almost equally true for boys and girls. Distribution and viewing of pornography is also widespread, as older boys were often willing to disclose. A few – even primary school pupils – mentioned sexting.

Promoting responsible phone use in school

Many head teachers have asked us how to promote responsible phone use in school. Here are some suggestions:

Pupil phone use: It is important to have a clear school policy on pupil phone use, to inform parents about this and to explain the reasoning behind it. If the school has decided to allow pupils to bring their mobile phone to school – for instance, because of travel problems – but not to use it in school, then pupils could be required to put a name tag on their phone and deposit it with a staff member, using a register, before school begins. In this case parents or carers must be given a phone number for urgent messages.

If the school allows pupils to use mobile phones in class as calculators or to access the internet, pupils and their parents could sign an “acceptable use” agreement each term. This would promote effective use of class time and their own and other pupils' safety.

Pupils also need reminders not to publish personal information on the internet and to tell their teacher, a parent or carer if they access any information that worries them. Parents must be encouraged to help their child follow the school's guidelines. Asking them to sign an acceptable use agreement together with their children will help.

Teacher phone use: Teachers' mobile phones should be switched off and left in a safe place during lesson times. If teachers are using their phones when pupils are banned from doing so, pupils may become resentful. Staff should not contact pupils from their personal mobile phones or give their mobile phone numbers to pupils or parents. This would help teachers maintain sound professional practice.

EXCITING EXPERIENCE AT THE FOREIGN AFFAIRS MINISTRY

Ms Juliet Kasisi Kiio, an International Relations and Diplomacy student at Technical University of Kenya's School of Social and Development Studies, narrates her internship experience at the Foreign Ministry.

From classwork to the new world of diplomacy and international relations practice, corporate operations, and administrative duties, an internship opportunity at Kenya's Foreign Affairs Ministry rapidly elevated my worldview, shaped my career and fostered my confidence.

As part of my bachelor's degree coursework, we are required to have a three-month internship experience. The opportunity at the Ministry goes beyond the basic coursework requirement; I am now a confident diplomat-in-the-making with a feel of field practice and responsibilities that I am proud to have achieved.

I can handle communication duties that meet professional standards, deal with administrative operations including planning, protocol, liaison among other responsibilities that have since muscled my hand in the field of international relations and diplomacy.

Part of my responsibilities at the Ministry was to carry out protocol and liaison duties during local and international conferences.

we are required to have a three-month internship experience

My internship colleagues from other universities and I were lucky to participate in two international conferences that were held at Kenyatta International Convention Center (KICC)

in Nairobi with the Foreign Affairs Ministry taking the lead in ensuring part of the planning and execution of the events was carried out flawlessly.

The two conferences were the Fourteenth Session of United Nation Conference on Trade and Development (UNCTAD 14) and the Sixth Tokyo International Conference on African Development (TICAD VI) that brought together Heads of State, Governments and Ministries as well as prominent players from the business world, civil society and academia to tackle global trade and economic development issues.

UNCTAD 14 was held from 17th to 22nd July 2016 while TICAD VI was held between 27th and 28th August. Kenya is the first country to host TICAD VI conference in Africa.

For this reason, we (interns) were appointed among other Ministry officials as protocol and liaison officers where we got a golden opportunity to attend side seminars, main conferences, and exhibitions.



Juliet Kasisi Kiio (right) talking to a UNCTAD delegate

I learnt vast cultures from across the world, appreciating diversity from the simplest of mannerism as making greetings. Delegates I interacted with include personalities from China, Japan and Germany.

I also worked side by side with professionals who act on behalf of the country in various capacities in terms of bilateral and multilateral duties, international trade and commerce, international security, politics, tourism, among other key socio-economic and political docket of international relations and diplomacy.

Part of my duties at the Ministry included corresponding with Kenya's Embassies and Missions, drafting of diplomatic letters, as well as receiving telephone calls from various Embassies as well as helping in issuance of appointment letters.

My interaction with diplomacy professionals and office administrative staff of high standing at the Ministry was a great learning experience and the highlight of my career.

THE FRENCH CONNECTION

An event dubbed "Training on The Teaching of French for Specific Purposes" was organized by the French Embassy in conjunction with Alliance Française and took place on 31st May to 4th June 2016 at the Alliance Française, Nairobi. It targeted participants from Technical University of Kenya as well other Kenyan public universities and colleges offering the French language in their various academic programmes.

The event aimed at equipping learners with the linguistic and intercultural competency to interact in a professional context. The theme of the training was "Curriculum development and implementation of French for professional interaction in business, tourism, hotel and restaurant, international relations and diplomacy"



Participants at Alliance Française pose for a group photo

It was facilitated by Mr. Alexandre Holle from the Centre of French language Institute in Paris- France. The training recognized the need to tailor

a curriculum in line with the professional demands and industry expectations necessary for the accomplishment of professional tasks.

TU-K AND POLICE BAND IN JOINT MUSIC WORKSHOP

The TU-K Band and the Kenya Police Band recently engaged in a training workshop with the rare opportunity to share their experiences and improve on their music performance.

Prof Emily Akuno, Executive dean Faculty of Social Sciences and Technology, said that, TU-K band has collaborated with several bands in exchange programmes, exhibitions, festivals and other activities and has recently participated in a performing Arts event themed "Ongea" The Eastern Africa Music Summit Exhibitions held at Sarit Centre in Nairobi.

"We have done a lot of joint practices with Eastern and Central Africa music groups and other institutions like Makerere and Kampala Universities" said the Professor, adding that her



Kenya Police Band performing during the workshop at TU-K main hall

team have also invited some international music experts from USA, China, Korea, Canada and South Africa. Local professionals from Police band, Prison band,

Military band and other individuals have also been called to assist in training music students on how to improve music standards.

She said the school has also visited local music producers like Homebody's, Ogopa Djs and Calf Records for practicals. She said part of the team is currently in Morocco on an exchange programme.

The Director of TU-K band, Mr H. Maseka, said he was happy with the band's progress. He is in-charge of over 600 music equipment at TU-K and trains young music practitioners both in High School and Universities. Meanwhile the group is scheduled to visit Tanzania and Rwanda at the end of this month.

FIVE-YEAR GREAT LAKES LAND GOVERNANCE BLUEPRINT LAUNCHED



SEALAN workshop participants in Rwanda

The Technical University of Kenya (TU-K) is part of the Great Lakes academic and research land administration institutions building a five-year plan for the regional land administration and governance.

In a workshop held in Rwanda recently, Strengthening of East African Land Administration Network (SEALAN) together with the Horizon 2020, brought together 15 Great Lakes Region academic, research and professional representatives to develop the network's strategic plan, business plan, and research policy.

The workshop identified short and long-term research and advocacy skill gaps that call for strengthening of collaborative explorations in the East and Central African Region.

The East African network covers three thematic areas including land administration, land governance, women and vulnerable groups.

The School of Surveying and Geospatial Sciences Director Prof Gordon Wayumba led the TU-K

team including Dr Robert Nilson, Mr. George Konguka and Mr. Peter Odwe at the three-day workshop which was held at Rwanda's Institute of Applied Sciences (INES). The workshop was guided by three lead experts from the Netherlands.

"The outputs including a strategic plan, business plan and research strategy, are to be prepared by the lead consultants and circulated to the network

"The major challenge facing the African continent is to rapidly and cheaply map millions of unrecognized land rights"

member institutions for review before ratification at the annual general meeting in July this year," the network report says.

Also developed was an innovative suite of land tenure recording tools dubbed Horizon 2020; Its4Land Project. The project is inspired by geo-

information technologies that respond to end-user needs and market opportunities in sub-Saharan Africa, reinforcing an existing strategic collaboration between the EU and East Africa.

"Since the major challenge facing the African continent is to rapidly and cheaply map millions of unrecognized land rights, the project will improve land tenure recording which will aid in delivering tenure security, dispute reduction, investment opportunities, and good governance."

Academic institutions, research and professional representatives from the network include Ardhi University, Tanzania; Bahir Dar University, Ethiopia; Institute of Applied Sciences, INES, Rwanda; Makerere University, Uganda; Regional Centre for Mapping of Resources for Development, Kenya; Technical University of Kenya, University of Nairobi; University of Burundi, Burundi; University of Juba, South Sudan; Université évangélique en Afrique, DRC and University of Rwanda.

LAND ADMINISTRATION STUDENT PRESENTS PAPER IN WASHINGTON

A Technical University of Kenya Land Administration student was among several scholars and land management and development players from across the globe who recently convened in Washington DC, to exchange ideas and experiences on land administration.

Victor Ouna, a 4th Year Bachelor of Land Administration and Information student presented a paper titled: Development of a Geoportal for Effective County Land Administration; Case study of Nairobi City County. His paper focused on the use of technology for gathering information on land that can be harnessed for purpose of revenue collection.

Speaking to *TUNews* after attending the conference, Ouna said his paper explored the need to seek ways to improve taxation efficiency in the county government systems through technologies and that there was a need for engagement between scholars and players in sharing of ideas and experiences that safeguards progress in land administration.

"The conference discussed ways that can be pursued to guarantee inclusiveness, suitability and reliability, building capacity and ensure better land information and more tenure security contribute to wider society and progress towards the sustainable development goals," said Ouna.

The 17th Annual World Bank Land and Poverty Conference was attended by over 1,000 participants from more than 100 countries and brought together stakeholders from governments, academia, civil society, development communities and



Panelists at the 17th Annual World Bank Land and Poverty Conference in held in USA



Victor Ouna

private sector to discuss issues that affect land administration.

Part of the conference agenda was methodological innovation for land related impact research, monitoring and globally comparable land data generation strategic for expanding coverage, reliability, transparency and suitability of land.

Administration, service delivery, innovation in recording of rights, mapping and land data utilisation, fostering discussions on land policy design and implementation, impact evaluation and progress monitoring and the latest

research carried out.

Key components that formed part of the discussion points were urban land management strategies for city development and affordable housing, tenurial determinants of land use changes, landscape development and soil rehabilitation and enhancing tenure security for common lands and natural resources for local development.

Ouna emphasised the importance of Kenyan universities in sponsoring students to attend such forums where they can groom their innovations, interact with other scholars and find solutions to challenges.

"Such forums provide key ideas, experience and expertise that are critical in solving global challenges," he noted.

TU-K'S AERONAUTICAL STUDENTS TRAIN ON KQ'S DREAM LINER



The Technical University of Kenya (TU-K) Vice-Chancellor Prof Francis Aduol, has emphasized that students pursuing Aerospace and Aviation Engineering program at the university have to attend Industry Based Learning (IBL) outside the university for one solid year. Such a move he noted, will ensure that they are imparted with the right skills and are exposed to the prevailing happenings in the world of work. "Students must be instilled with discipline and imparted with the right skills. They must be exposed to the hands on skills before graduating. This will enable them become relevant in their field of study," added the VC. Prof Aduol said this when he

accompanied Aerospace and Aviation Engineering students to an academic trip to the national carrier Kenya Airways (KQ). He was received by KQ Technical Director, Martyn Haines, head of Technical Services, Roy Sifuna, head of Base Maintenance, Peter Marere among others. Accompanying the VC from the university were; Executive Dean, Faculty of Engineering Sciences and Technology (FEST) Prof Alex Muumbo and Chairman Department of Aerospace and Aviation Engineering, Prof Faustine Ondore. The VC who toured the KQ hangars and the 787 Dream Liner, said he was impressed by the training students received as far as technical work was concerned.

He further noted that there will be a framework for formal recognition of qualifications gained from IBL, so that students' competency and their ability to perform a technical task, are graded for the overall credits for a given academic year. The Kenya Airways technical managers explained that TU-K was the first Kenyan university to give the airline students in aerospace and aviation engineering discipline. TU-K has established partnership with KQ and other stakeholders in the field of Aerospace & Aviation Engineering. Students from the university have been receiving hands-on training at the facilities of KQ and have been allowed academic group visits.

Chairman Department of Aerospace and Aviation Engineering Prof Faustine Ondore pose for a picture with students.



The Vice-Chancellor Prof Francis Aduol in the cockpit



Alumni of TU-K employed by KQ to maintain its fleet of aircrafts

REPRIEVE TO MOTORIST AS NEW TYRE REPAIR MACHINE INNOVATED

Motorists will soon be able to repair badly punctured tubeless tyres with guaranteed durability and high quality finish.

The Automatic Tyre Vulcanising Machine, a refined innovation borrows from a combination of market tyre-repair technologies, as well as industrial and home-customised solutions.

The Tyre Vulcanising technology is largely a remote-controlled machine that repairs tyre cuts depending on variables including tyre kind, quality and thickness.

The Vulcanising machine subsequently gives heating and curing timeframes that includes injection of a coolant agent.

According to the innovator, Elijah Mugo, a Fourth Year Mechanical Engineering student at the Technical University of Kenya, the machine repairs up to 4-inch tyre cuts in a process that takes between five to 35 minutes.

"This innovative solution is aimed at giving a solution to motorists guaranteeing a drop in costs, durability and efficiency," said Mugo adding that the tyre repair process is remotely controlled.

From a home-made tyre repair solution that is manually controlled using screw jack for the grip and paraffin stove to heat the working surface, the Vulcanising Machine improves on the solutions giving a customised hydraulic mode that gives uniform compact pressure applied on both working surface ends.

"This is an electricity-powered machine that has two heating surfaces thus an increased rate of heat transfer. The machine has a built-in buzzer that detects the



Mr Elijah Mugo shows how Tire Vulcanizing technology works

amount of heat and sends out an alarm once heating and curing process in complete," says Mugo.

"The tyre is hydraulically mounted on a working surface, with a raw patch on the puncture area allowing an operator to sets the heating time duration and waits for an alarm to go off once the patch is treated," Mugo explains.

Mr Mugo notes that an injection of ionised water during treating process and uniform hydraulic compression ensures a durable repair.

"A tyre is hydraulically mounted onto a working surface with a raw patch on the puncture area, allowing an operator to set the heating time and waits for an alarm to go off once the patch is treated," – Elijah Mugo

"Without cooling the surface and applying controlled pressure leaves the repair with a bulge that would not last before tearing," he notes.

Mugo says he developed the idea after vehicle he was driving in his Subukia hometown got a large tyre cut where he sought a local service from a local tyre repair shop that uses a stove, screw jack and a rim as a working surface.

"The process took me close to an hour, with poor finish and a bulge. From my engineering knowledge, I thought I could give a solution targeting motorists who live upcountry and travel across rough terrains, and of course to ensure durability, efficiency and cost cutting," he adds.

Mugo is now working on a formula to customise repair patch with brands.

He is already in talks with tyre manufacturers and corporates to support his bid in growing the new technology.

COST-EFFECTIVE SOLAR IRRIGATION TECHNOLOGY TO AUTOMATE FARMING

ATU-K student has invented a prototype solar-powered irrigation system. The technology is environmentally conscious and is envisaged to cut down on farming costs and improve efficiency.

The Automatic Solar Irrigation Management System (ASIMS) is tailored for arid and semi-arid areas. If adopted and commercialised, it will end the need for the use of petroleum-powered generators and water pumps.

According to the innovator, Mr Japheth Karisa, the project was developed with multifaceted knowledge borrowed from mechatronics; mechanical and electronics.

The combined technologies detect soil moisture and water level deep in the soil, simultaneously switches pipe valves on and off, automatically breaks water flow when water storage facilities are full and inversely opens valves to the tanks when they are empty.

Mr Karisa, a Bachelor of Engineering in Mechanical Engineering finalist said his innovation employs soil moisture sensors in detecting water level to the depth of plant roots.

"Once the soil is dry, temperature magnets and moisture sensors activate a relay to a micro-controller where valves are in turn automatically opened to allow water flow to the irrigation line," Karisa explained.

When water gets to a set soil depth, another relay is generated to break water flow.

"Several researches on soil type, texture, length of time the soil takes to hold water among other important studies should be conducted to set system standards," he notes.

The one of a kind technology would assist farmers by bringing down the cost of production and efficiency, the innovation meets



Mr Japheth Karisa inventor of The Automatic Solar Irrigation Management System

environment standards that call for a reduction of gas emissions and adoption of green energy technologies.

Karisa who grew up in Malindi, Kilifi County where farming along River Galana is largely dependent on irrigation, draws his inspiration from his upbringing and strives to develop better technology to solve societal and economic challenges among communities.

"Back home in Malindi,

"Several researches on soil type, texture, length of time the soil takes to hold water among other important studies should be conducted to set system standardization," – Karisa

farmers spend a lot on money on purchasing diesel to power water pumps and generators, this is not only expensive but also leaves the environment in a terrible state from air pollution and river pollution emissions that would have been mitigated by the use of substitute solar energy," he explains.

"What I am developing ensures water used in irrigation is kept at a minimum, through the use of soil moisture sensors, the irrigation solution also cuts down on wastage since most of the irrigation system components are automatic."

Karisa is looking forward to partnering with agricultural, development and financial institutions in bringing the project to fruition.

VC: SUSTAINABLE DEVELOPMENT GOALS ARE ACHIEVABLE IN AFRICA

The end of world poverty will mark the success of the Sustainable Development Goals. This declaration was made at the CAPA International Conference in Mombasa, Kenya. The theme of the June 2016 Conference was "Strategic Involvement of TVET Institutions towards the Attainment of Post-2015 Sustainable Development Goals in Africa."

While speaking at the conference, The Technical University of Kenya Vice-Chancellor, Prof Francis Aduol drew parallels between the Sustainable Development Goals (SDGs) and Kenya's very own blueprint, the Kenya Vision 2030, diffusing the scepticism surrounding the feasibility of both blueprints. "As long as the SDGs can be achieved, the Kenya Vision 2030, just like many such economic blueprints in Africa, can, and will succeed," Prof Aduol explained, adding that all that is needed is goodwill from the relevant stakeholders.

Prof Aduol was addressing delegates from member-institutions of various Commonwealth African countries. In his presentation, Prof Aduol made sense of industrialisation trends of South-East Asian countries, including Taiwan, South Korea, China and India, and the Latin American nations of Brazil and Mexico. He explained the lessons that African economies could learn from the case studies. The presentation laid emphasis to the relevance of Sustainable Development Goals to African populations, adding that if the SDGs could be achieved in Africa, the whole blueprint would have been achieved. This is because Africa accounts for a whopping 42% of world poverty.

The presentation also outlined the vital role of education in the achievement of the SDGs, with special focus on technical education. Prof Aduol described the creation



The Vice-Chancellor Prof Francis Aduol (left) talks to Elizabeth Achieng' about her innovation on vertical farming during the 2016 Universities Exhibition held in Mombasa

of technical universities from the existing Technical Vocational Education and Training (TVET) institutions as a first, using The Technical University of Kenya as a special case study. He added that, however, a lot needed to be done to resolve emerging issues such as students' negative attitude to the Bachelor of Technology (B.Tech) programmes.

"Heads of institutions, need to spearhead the delivery of technical education curricula, also sensitise students, parents and other stakeholders on the importance of the B.Tech programmes" –Prof Aduol

"Heads of institution, need to not only spearhead the delivery of technical education curricula, but also sensitise students, parents and other stakeholders on the importance of the B.Tech programmes," Prof Aduol said.

The Vice-Chancellor also observed that it was ironical for agriculture to be the mainstay of the African economy, yet Africa still

relies on food and food products from outside Europe, Asia and the Middle East. "Africa is not in the developing category yet. Agriculture contributes to a larger portion of Africa's economic growth than Europe, yet in terms of volume of production, the smaller percentage in Europe is still far much bigger than Africa's agricultural output," Prof Aduol added. This, he said, could change if the continent would integrate technology to its agricultural activities.

He attributed Africa's sluggish performance in the world economy to its failure to train technicians and technologists in sufficient numbers. His presentation observed that European countries were performing very well because of the special priority accorded to technology and innovation. The Vice-Chancellor also explained that the reason African governments still invite Chinese and other far-eastern contractors to take over mega infrastructure projects is because they have been training engineers for decades, at the expense of technical expertise. "If TVET is given the appropriate attention and more technicians and technologists are trained, Africa will rise and become equally competitive in the long run," he added.

SCHOLARS, EXPERTS CHALLENGE STUDENTS ON INNOVATIONS

The Technical University of Kenya in partnership with the Kenya Institute of Management recently organised the 2nd Annual Clubs & Associations Exhibitions Day themed "Innovation and Creativity for the real world" where the guest speakers talked on the role of science, Technology and Innovation towards achievement of Vision 2030. The event was organised on 23rd June 2016 at the University Main Hall. Among the guest speakers was Dr Julius Weche, CEO AKAD Educational Group.

Dr Julius Weche in his speech talked about Creative and Innovative Entrepreneurship in the modern world based on quality, price and wider market stretch. He urged young people to think of opportunities that they can see and improve on them, also asked students to think of innovation while still young and energetic and to keep eyes open, do research and learn to communicate widely. He gave an example of the Facebook innovator, who did it at the age of 19 and is now worth 39 million dollars.

The CEO told the students how he saw an opportunity and a gap in Botswana, where there was constant cattle rustling among the communities; many animals were being stolen by the bushmen. He therefore came up with an innovative ideas, he made an animals ear tag installed with a GPRS tracker software with sensor connected to the mobile phone which can track and tell the location of the animal as well as tell the animals temperature and if the animal is sick. It worked for him and he sold the gadget widely in Africa and abroad. He said he bought his first Benz from the sales of this tag.



Dr Julius Weche holding one of his ear tag innovation

He asked the students to look for such opportunities and come up with innovative ideas to come up with quality products that can attract potential customers locally and internationally, this they can only achieve if they do thorough research, seek advice from experts, visit professional bodies/innovators. Professor Gituro Wainaina - Director General Vision 2030 {Delivery Secretariat} said that for vision 2030 to be achieved, integrity, competence and skills must be anchored on the innovation and Technology. Prof Wainaina said that there is need for young people with skills, discipline, hard work,

He made an animal ear tag installed with a GPRS tracker software with sensor connected to the mobile phone which can track and tell the location of an animal

and competence to bridge the gap in order to achieve Vision 2030. He asked young people to venture into business oriented technology and not seek for formal employment alone. He gave an example of the recent Uber Cabs as an indication of innovation and technology that worked perfectly. He urged youth to have a clear vision of competitiveness and to act, be creative, have the right assets and capability to compete in the market.

He asked innovators to make use of social media for marketing and research on products that go viral, pressing that young people must embrace and make sense of technology in order to improve the life style of people and improve the economy.

Also in attendance were; Dr David Muturi-CEO Kenya Institute of Management and Miss Miriam Mukami CEO Kenya Institute of Management [KIM] Dr Muturi talked of Management and Innovation Leadership in the 21st Century.

STUDENTS DEVELOP SOLUTION TO BEAT EXAM CHEATS

A Team of TU-K Electrical and Electronic students has developed a multi-faceted innovation to curb examination irregularities. The innovation builds a two-fold system merging together a technological generation and a multilayered packaging procedure envisaged to automate handling, transfer and storage of examination materials.

At every stage, the system relays security information to cloud storage facilities to ensure data safety.

It is an ingenious inception structured to weed out unauthorised personnel from accessing examination papers. The project's scope captures entire security measures from the packaging process down to exam administration.

According to Eston Oboch, the lead innovator developing the Exam Irregularities Mitigation System, the technology mobilises computer application, mobile telephony services, internet connectivity and scanning machines that are used to electronically read generated serial codes and QR scans.

"By developing an examination packaging with four layers each embedded with different automated electronic mechanisms, we make it very difficult for unauthorised persons to access the papers, and if they manage, several alerts would have been escalated to the control unit where action ought to be taken," Oboch explains.

The process includes reading of embedded applications within each level of the multilayered compartments during decompartmentalisation.

"From the traditional two-layered packaging system, we are



The team behind innovation of Exam Irregularities Mitigation System (EIMS)

developing a superior four-layered package system with inbuilt security measures. At every level of handling, a security measure is automatically dispatched to the central control unit," says Oboch.

The team is capitalising on technology to give credible solution to the raging exam irregularities menace.

Other team members are

Christopher Lechuta, Tracy Langat, Obadia Kioko, Caroline Kerubo, Eric Musyoka, Mwangi Micha, Maurine Munala, Abraham Mautine all pursuing Bachelor of Engineering in Electrical and Electronic Engineering drawn from different years of study at TU-K.

"The innovation aims at restoring confidence among education stakeholders, students and parents," Langat adds that

security measures and relayed data is kept secure in a remote location.

Maurine Munala, another team member indicates that embedding security measures at every stage makes everyone accountable either on individual capacity, team or as an institution.

"At every stage, a user who interacts with the packages are

required to enter their credentials that should match captured details," says Oboch. Details such as deployment numbers, names and mobile numbers are pre-captured.

Transfer of the materials from different hierarchies is monitored from a central storage facility to regional, county facilities systematically, as well as to the examination centres.

At those stages, the material data codes are verified against those captured at the database.

"You realise most leakages are made a few hours before administration of the exams, that means unscrupulous persons access the papers beforehand and share it, largely through social media or mobile phone documents sharing applications," explains Oboch.

TU-K HOSTS AFRICA TECH CHALLENGE

The 2016 Africa Tech Challenge was hosted by the Technical University of Kenya (TU-K) for the third time in a row.

The event attracted participants from Uganda, Ghana and Zambia are represented in the challenge, making it an international competition.

The competition was launched in 2014 as an initiative of AVIC International - a Civil Engineering firm based in Nairobi in partnership with the Ministry of Education, Science and Technology. AVIC International, a global player in the marine and offshore industry, aims at curbing unemployment, producing hands on graduates as well as entrepreneurs.

According to the AVIC's international Project Manager Xin Zhang, the objective of the competition is to spur a culture of entrepreneurship among the youth by encouraging them to utilise their technical capabilities and creativity to be self-reliant through job creation.

The competition was officially opened by TU-K Vice-Chancellor, Prof Francis Aduol who emphasised on the importance of the competition and its impact on



Africa Tech 2016 participant in the Engineering Workshop at TU-K

students in enabling them meet the requirements of the industry.

"Consider this as a great privilege for yourselves and for us as a university to tell the world what we can offer. The training is in line with the university's tradition of seeking the input of industry practitioners and professionals in the training activities, and integrating an elaborate and practical entrepreneurship programme," he said.

While speaking about the

role of Technical Training Institutes (TTI) in enhancing quality education in the country and beyond, the VC explained that technical education plays a vital role in human resource development by producing skilled manpower, enhancing industrial productivity and improving the quality of life.

"Kenya, as most African countries, has been left behind in the economic transformation by countries which were at par in the 1960s; this is mainly due to the slow pace of industrialisation. The lag in industrialisation can be attributed largely to the lack of skilled manpower," he noted.

The Africa Tech Challenge has so far transformed the lives of so many ambitious, intelligent Kenyan students by offering them the necessary support and training in order to pursue their dreams.

The winning three teams were awarded cash prizes of Sh200,000 each, scholarships to study in some of China's best technology universities and internship in renowned tech firms.



Participants taken through the motions during the Africa Tech 2016 competition in the Engineering Workshop at TU-K

OPEN-MIC THEATRE, THE PASSION LAUNCHPAD AWAY FROM CLASSWORK



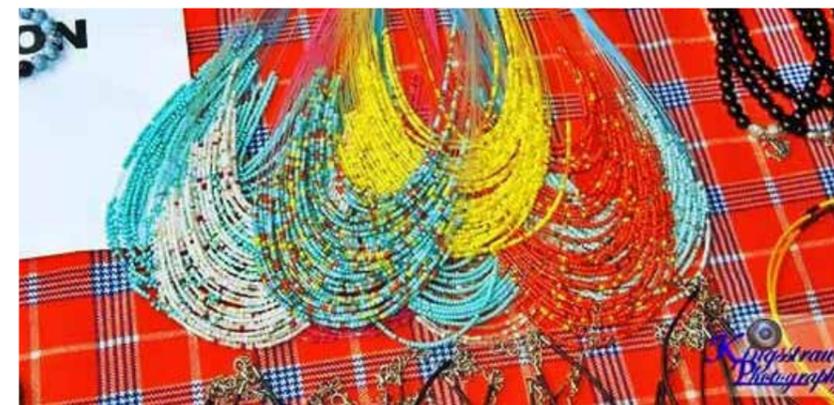
Sammy Makumi, club chairman

Away from classwork and laboratory sessions, a team of music lovers, artistes, dancers who occasionally gathered for jam sessions, music competitions and theatre, have now pooled together under a club at the Technical University of Kenya where students are honing performing arts skills.

TU-KLive Art, focuses on contemporary and performing arts and draws membership from various schools in Engineering, Business, Architecture, Information Science, Biology, and Hospitality among others.

The club chairman Sammy Makumi said the group runs an Open Mic Session every Thursday between 5:30 pm and 8:30 pm.

"The weekly event at the university features vocalists, instrumentalists, poets and dancers with scheduled performances, and competitions," said Makumi who



Bracelets from Dada Collections on sale at the exhibition

is a Fourth Year student pursuing a bachelors degree in Urban and Regional Planning.

He notes that the sessions give a platform to upcoming performing artists to explore their talents. "The audiences give us a platform to grow our skills and confidence before getting to the big stage," he added.

During the sessions, members

with several artistic creations exhibit and sell their works. These include African collections, souvenirs, graphic, photography material, design wear among others.

"Dada Collections, one of the groups in the club is already making money selling African wear, souvenirs, bracelets," noted Makumi.

Q&A WITH KENYA 7S STAR ROBERT "MAJEI" ARINGO

TU-K's Information Technology student shining in 7s rugby game



Aringo held high by teammates after the team won the Singapore 7s tournament

Club: Impala Saracens

Nickname: Majei.

Profession: Information Technology.

Positions: Scrum half / centre / Backrow

Facebook: Robert Aringo

Twitter: Majei_

Instagram: Majei_

Q. How did you become interested in rugby?

A. I was actually a basketball player. I was bullied into playing by a couple of friends back in high school at Saint Mary's School, Nairobi.

Q. At just 23 you boast of numerous national Sevens caps and chairman's select participation. What has it been like representing your country at such a young age?

A. I guess the territory comes with the experience over the years of playing. It is a wonderful experience stepping into the park each time to represent the 40m+ Kenyans who rally behind you.

Q. Describe the experience of being part of Kenya's maiden Sevens series crown in Singapore, shocking reigning champions Fiji

A. Wow!! I have never lived such a moment in my life because back in high school I just dreamt about it and for it to become a reality to be engraved in the books of history is something I'm very proud of and the good feeling will stay with me for a long time.

Q. What are your other career highlights at club level?

A. To be honest, my club run at the Resolution Insurance

Impala Saracens hasn't been the best, playing second fiddle every now and then but my biggest highlight was when I was chosen in my maiden year of my call up to the national 7's to captain the team throughout the 7's circuit. Big shoes to fill and we did have a good season.

Q. Who has been your biggest inspiration in your career?

A. I would say former Kenya international, Innocent Simiyu. He is a humble bloke and with all his achievements in his rugby career he still has the humility to guide and help you not only on the pitch but also off the pitch.

Q. Which team do you look forward to playing the most and why?

A. As of now I would really like to represent Africa as a continent in the **Leopards**, to be honest locally I can speak about being capped for the national 15's sides and a appearances for the national 7's side so I guess the next step is taking over Africa then I guess the world.

Q. What does your typical daily diet consist of?

A. (Laughs) that's a well-kept secret, but I love pizza so I occasionally sneak in a cheat meal every now and then.

Q. What does a typical day's training include?

A. Rugby is not a game for the faint hearted. From getting up at 6 to hit the gym then a pitch session and then end it with an endurance session isn't easy



Aringo on his way to the try line

amidst that attend classes and then another evening session. Doesn't seem appealing, but all in a day's work I guess.

Q. If you could attend any sporting event in the world, what would it be?

A. The Grand Prix. There is just something about cars moving at fantastic speeds. Coming in at a close second would be the rugby World Cup.

Q. While growing up, who was your all-time favourite rugby player?

A. Richie McCaw, the former All Blacks captain. His leadership and authority on the pitch was what drove me to want to play as he did.

Q. What training drill do you dread the most?

A. The strength and conditioning Kenya 7's bench push us hard. But I really dread the 2Kms run.

A. Like I said earlier all its all in a day's work, just know that one activity leads to another so you can't laze around till your day is done.

Q. What advice would you give to any young, aspiring sports players?

A. Do what you love and love what you do. And always give your 100% in every single thing you do be it sports, school, work or life in general.

NYARUAI QUALIFIES FOR CHESS OLYMPIAD

A casual observation of friends playing chess inspired Joyce Nyaruai to develop a passion for the game of wits that is Chess.

She threw in her hat into the ring and what started with a couple of losses became a launchpad into a career in the game. Joyce Nyaruai, is now heading to the 42nd World Chess Olympiad that will be held in September in Baku, Azerbaijan, to represent Kenya and battle the global grandmasters for the coveted Chess title.

The Championship will bring together participants from more than 150 countries.

The Third Year student at Technical University of Kenya (TU-K) majoring in Electrical and Electronics Engineering, is among nine chess players, four women and five men that will represent Kenya in the global event that kicks off in September this year.

Her Olympiad qualification was unexpected because rarely do individuals move from amateur to professional chess in less than two years.

"Engaging Chess masters in local and regional tournaments, solidified my hand in the game and eventually gave me thrust to the World Championship," said Nyaruai during an interview.

Joyce has travelled across the continent battling in various categories including junior tournaments, women categories and open boards.

"I have taken on Egyptians, Namibians, Ugandans chess champions and even Kenyans. In each board, I became better I learnt a new skill," said Nyaruai.

"Mastery of chess demands a player calculates their game



Joyce Nyaruai concentrates on the chess board before making a move

from the beginning to the tail-end," Nyaruai disclosed, adding that chess requires consistency that goes beyond the chessboard.

From a humble background in Nyeri, Nyaruai draws inspiration from her father who encouraged her and could at times go head-to-head cheered on by her siblings.

In 2012 while she was at her final year at Tumutumu Girls, Nyeri County, she had her first encounter with the chessboard. Days after her admission at TU-K, she spotted some college mates pushing chess pawns back and forth and slowly started to gain interest.

"I love sports, and since play-

"I have taken on Egyptian, Namibian, Ugandan chess champions and even Kenyans. In each board, I became better and learnt a new skill," - Nyaruai

grounds are far off, and the Chess boards are so close, I automatically developed a love for the game of chess," Nyaruai said.

The first ever tournament she participated in was in Mombasa in 2013. The tournament didn't go well and she finished in the back row.

"Although I was badly beaten during the Mombasa tournament, I never faltered. When I returned to the University, I teamed up with other Chess players including one of the university business lecturers who is also an avid player and embarked on mastering the game," she says.

Joyce attended a second tournament in Uganda where she participated alongside two other female players from TU-K during the East African Games. She was again beaten but her colleague from the university scooped a Silver Medal.

From the two tournaments, she managed to improve her ranking and slowly began to

build her confidence and in the process preparing for bigger battles.

By the time she participated in an Open tournament Kisumu and Mombasa in 2015, she had already built enough confidence and skill to engage in open boards playing against men and women masters.

She gained more confidence in competitions in Nakuru and Eldoret among them Kenya Universities Sports Association (KUSA) games where she posted impressive results.

Her breakthrough came in July 2015 during the Makini Open where she won her first major tournament. Later in the year, she tied with a Ugandan during Bungoma Open securing a ticket to Tanzania that was sponsored by Chess Kenya.

In Tanzania she participated in the Open series coming in at position 10 out of 42. At the Close of 2015, Chess Kenya shortlisted her for the Africa Junior Chess Championships that was held in Seychelles.

"At the Under 21 African Chess Championships, I scored 4.5 points out of nine, this was a tough tournament, I met strong opponents from Angola, Egypt, South Africa among other African countries," she narrates.



Joyce Nyaruai competes with a colleague on campus

"Chess Kenya tallies top 10 players in both men and women categories who have attended three rated tournaments who square off with each other and the top four qualify for the global sports event," -Nyaruai

In April this year, she was again selected to participate in Zone 4.2 Competitions bringing together East Africa countries. She scored five out nine points qualifying for the WCM title. A recognition title in Chess rankings.

From her rapid chess campaigns, Nyaruai stood a chance of making to the World Championship - Olympiad team of the 10 players who would represent Kenya in Baku.

"To qualify for Championship, a player ought to have attended at least three Fédération Internationale des Echecs (FIDE) - rated tournaments," she explained.

Due to her hard work, Nyaruai met the threshold and was in good position to go for the Championship.

"Chess Kenya picks top 10

players in both men and women categories who have attended three rated tournaments who square off with each other and the top four qualify for the global sports event," explains Nyaruai.

The weekend of June 11 and June 19 was Nyaruai's ultimate test battling it out with nine other competitors to clinch her position to the competitions.

With consistency and zeal, Nyaruai scored 7.5 points out of nine securing her a ticket to Baku.

"This was exciting news, that came during Father's Day, and was the perfect gift for my dad who has supported me so much," she said adding that the announcement was exciting for her fellow students friends, relatives and more so her trainer, the National Chess Ladies coach Moses Andiwo.

When asked how she expects to perform at the World competition, Nyaruai promises to give it her very best "I will not lose without a fight," she says.

FACEBOOK COMMENTS FROM FELLOW STUDENTS

Kevin Kevness Tallor and 687 others

Kuresoi Pauline
Congratulations girl, m proud to be tuk alumnae

Jun 27 at 1:50 PM · Like · Reply · Message

Shadrack Mutisya
Congratulations Joyce

Jun 24 at 9:15 PM · Like · Reply · Message

Lewis Sammy
Congrats and wish her all the best. Believe you will win also

Jun 24 at 10:24 PM · Like · Reply · Message

Shirleen Amisi
Proud of you Joyce!!!!...all the best and I pray you bring the medal home

Jun 25 at 9:22 AM · Like · Reply · Message

Vinn Veen Mavisi
chess awesome....

Jun 26 at 11:04 AM · Like · Reply · Message

Tonney Ngaywah
all the best. you are a champion.

Jun 26 at 11:04 AM · Like · Reply · Message

Commenting as Technical University of Kenya

HOW MUCH DO YOU KNOW ABOUT CHESS?

Chess traces its origin from India's 7th century game of Chaturanga. In around 15th century, it became popular in Europe and the first unofficial World Chess Championship was in 1889.

Since 1924, Fédération Internationale des Echecs (FIDE), the game's international governing body has controlled its activities including organizing biannual World Chess Olympiad championships.

This year's Olympiad will be held in Baku, Azerbaijan in Eastern Europe from 1st September this year bringing together participants from more than 150 countries becoming the 42nd Olympiad.

Chess is however yet to be included in Olympics Games. Chess is among the 27 sports that have applied for inclusion in the 2020 Olympics in Tokyo. International Olympic Committee has since considered chess as a game and not as a sport.

Chess is a two-player board game played on a chessboard, a checkered game board with 64 squares arranged in an eight-by-eight grid.

Each player begins the game with 16 pieces: one king one queen two rooks, two knights, two bishops and eight pawns. Each of the six piece types moves differently. The most powerful piece is the queen and the least powerful piece is the pawn.

It is a 'game of minds' that demands high concentration, mastery of patterns, calls for stretch of plan and quick decision-making. To acquire chess mastery, players ought to critically calculate their game plan and logically execute their endgame.

What Chess does to the mind



Joice Nyaruai (top right) with colleagues during a practice session

is that it builds problem-solving skills. According to Edutech Chess, chess develops mental abilities used throughout life: concentration, critical thinking, abstract reasoning, problem solving, pattern recognition, strategic planning, creativity, analysis, synthesis, and evaluation.

It develops children's cognition improving good judgment and critical thinking as compared to non-chess playing peers.

Chess improves mathematical skills, planning and consequences, teaches logic. Math is about pattern-recognition, logic, and the ability to creatively play around with

What chess does to the mind is that it builds problem-solving skills. According to Edutech Chess, chess develops mental abilities used throughout life

variable in your head.

The chess-playing students become accustomed to looking for more and different alternatives, which resulted in higher scores in fluency and originality, chess equally builds emotional intelligence as well as verbal skills. They therefore become expert problem solvers.

Characteristics of chess players

Chess players have strong ability to remember patterns, openings, endgames, tactics and guidelines.

They have ability to visualise moves ahead and combinations. An average position could have as many as forty possible moves.

They are careful, handworkers, do a lot of calculations, reading and analysis of several chess games.

Chess players are smart, superior problem solvers mobilising logical analysis and deduction skills.



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; Pass Bachelor's degree and postgraduate diploma or equivalent from TU-K or another university. 	4 semesters
Master of Business Administration		
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 an 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
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.

The Director, School of Graduate and Advanced Studies | The Technical University of Kenya | P. O. Box 52428 - 00200, NAIROBI | Tel. +254 20 2219929, 3341639 • Fax: +254 (020) 2219689

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

DOUBLE WIN FOR TU-K STUDENTS AT THE MISS TOURISM CONTEST



Miss Kimanzi



Miss Mwangi

A combination of brains, brawns and beauty is what led to the recent crowning of two TU-K students to represent their counties in the recently concluded Miss Tourism Kenya competition.

Helen Kimanzi was crowned Miss Kitui County while Sharon Mwangi topped the competition to win the Miss Laikipia Chapter.

Miss Kimanzi who is a 4th Year journalism student says that her interest in modelling started way back in high school but got serious in 2016 when she first participated at the sub-county level competitions at Mwingi Central where she qualified to represent her county at

the national level.

19-year old Sharon Mwangi is a Second Year student in the School of Architecture and the Built Environment pursuing a degree in the Built Environment {Quantity Surveying}. Sharon beat 14 other contestants at the auditions to represent her county at the finals.

Miss Mwangi said her win came

Helen Kimanzi was crowned Miss Kitui County while Sharon Mwangi topped the competition to win the Miss Laikipia Chapter.

as a big surprise since she had not done any serious modelling in the past apart from taking part in the 2014 Miss Lucky Summer-Kasarani show, which was organised by the area MP, a competition which she won.

In early June 2016, she decided to give it another go when the county announced auditions for the Miss Laikipia contest. At the auditions 12 ladies were short-listed to compete for the nationals and she emerged the winner. "We were tested on the six pillars of tourism in Kenya including; flora and fauna, culture, environment, hospitality, infrastructure and finally on promoting peace and unity among

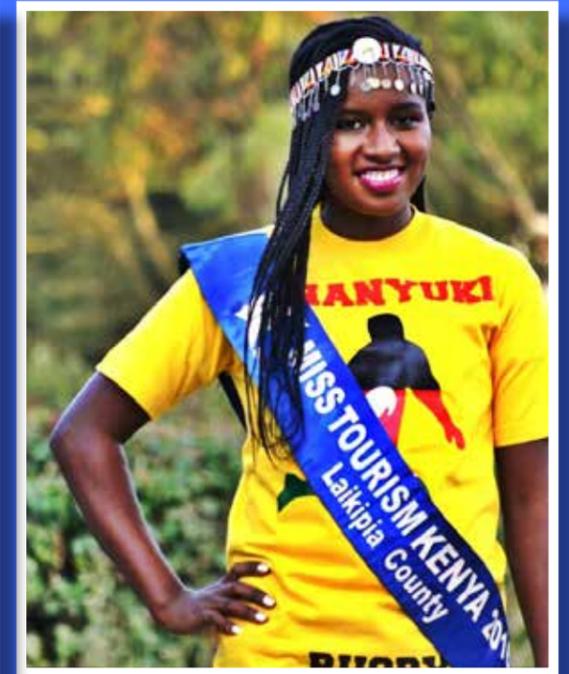
Kenyans," said Miss Mwangi.



Miss Kimanzi on stage



Miss Mwangi catwalks



Miss Mwangi poses for a photoshoot

On 19th June 2016 the finals for Miss Tourism 2016 kicked off at Kidundu Stadium in Central Maragoli, Vihiga with 45 counties represented in a tightly contested event that was judged over a two week period.

During the competition Miss Kimanzi says they were tested on areas of communication skills, brain work, physical fitness, confidence, public speaking skills, how best you can represent your county interests nationally and internationally and lastly on how best to spread the peace message among the Kenyan people. The peace message category carried the bulk of points and was won by the overall title winner Miss Homa Bay County, Rabella Wendy Omollo. Miss Kimanzi emerged tops in two categories; Most talented personality and as best physically fit personality.

Miss Kimanzi in 2014 emerged victorious at TU-K's Queen of Design, and was also the TU-K captain for the girls handball team in 2014 that made it to the national level. Kimanzi also currently plays in the national league.

Miss Kimanzi attributes her success to her passion for design

work, modelling, and sports. Coupled with the strong support from her family. Currently she is taking part in charity work back at her community in Kitui where she is directly involved in giving sanitary towels to young girls in the village and planting trees; she is doing all these in collaboration with the County Government. She also provides food, clothes, and shelter for the needy by soliciting donations from wellwishers.

With her big win, she was awarded a 1-year contract to work with the Ministry of Mining and Mineral Resources in Kitui County.

Laikipia County beauty queen Miss Mwangi is also quite athletic and played table tennis at high school as well as taking part in music and drama. She also took part in the 2015 Mr and Miss TU-K competition. She is set to launch an initiative called "Binti Utalii Initiative" which is aimed at helping individuals venture into herbal farming to produce raw materials in order to manufacture beauty products.

Miss Tourism Kenya is an annual event geared towards promotion of tourist attraction sites in all counties.



Miss Kimanzi answers questions during the contest



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)	<ul style="list-style-type: none"> 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)	<ul style="list-style-type: none"> 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)	<ul style="list-style-type: none"> 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 Real Estate	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 3-year Diploma in Real Estate or Equivalent 	6 semesters • Tuition: 90,000/= per sem.
Bachelor of Quantity Surveying	<ul style="list-style-type: none"> 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)	<ul style="list-style-type: none"> 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)	<ul style="list-style-type: none"> 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)	<ul style="list-style-type: none"> KCSE Mean grade 'C' (Plain) in with at least C in English, Geography, Maths, Physical Science, Physics, or CTI 	
Diploma in Technology Architecture	<ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> Geoinformation Technology Surveying Technology 	<ul style="list-style-type: none"> Higher Diploma in: <ul style="list-style-type: none"> Surveying Technology Surveying 	4 semesters (Evening) • Tuition: 90,000/= per sem.
Bachelor of Engineering in Geospatial Engineering	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> KCSE mean grade C+ with C+ in Mathematics, Physics, Chemistry, Biology/any Group III/any Group IV/any Group V. 	
Bachelor of Technology: <ul style="list-style-type: none"> Geoinformation Technology Surveying Technology 	<ul style="list-style-type: none"> Diploma in Technology (Dip. Tech), Geoinformation Technology • Surveying Technology OR Equivalent 	6 semesters • Tuition: 90,000/= per sem.
Bachelor of Real Estate	<ul style="list-style-type: none"> KCSE mean grade C+ with C+ in Mathematics, Physics, Chemistry, Biology/any Group III/any Group IV/any Group V. 	10 semesters • Tuition Kshs. 90,000 per semester
Bachelor of Science Land Administration	<ul style="list-style-type: none"> KCSE mean grade C+ with C+ in Mathematics, Geography, Economics, Biology/any Group III/any Group IV/any Group V. 	13 semesters (Integrated programme) • Tuition Ksh 90,000 per semester
Diploma in Technology: <ul style="list-style-type: none"> Geoinformation Technology Surveying Technology 	<ul style="list-style-type: none"> 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. 	8 semesters (Integrated programme) • Tuition: 36,000/= per sem.
SCHOOL OF ELECTRICAL AND ELECTRONIC ENGINEERING		
Bachelor of Engineering in Electrical and Electronic Engineering	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Higher Diploma in Technology (Electrical and Electronic Engineering Technology) 	5 semesters • Tuition: 90,000/= per sem.
Bachelor of Technology in Electrical and Electronic Engineering	<ul style="list-style-type: none"> 3-year Diploma in Technology (Electrical and Electronic Engineering Technology) 	7 semesters • Tuition: 90,000/= per sem.
Bachelor of Technology in Electrical and Electronic Engineering	<ul style="list-style-type: none"> 3-year TEP Diploma in Electrical and Electronic Engineering with 2 yrs working experience 	7 semesters • Tuition: 90,000/= per sem.

CONTINUES ...

CONTINUED

COURSE TITLE	REQUIREMENTS	DURATION/FEES
Bachelor of Technology in Electrical and Electronic Engineering Technology	<ul style="list-style-type: none"> 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)	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 3-year Ordinary Diploma or Diploma in Civil, Highway, Water Engineering, Building Construction or equivalent Diploma in Technology Civil Engineering or equivalent KCSE Mean grade C+ with at least C+ in Mathematics, Physics, and English 	6 Semesters, Kshs. 90,000 per Semester 5 Semesters, Kshs. 90,000 per Semester 10 Semesters, Kshs. 90,000 per Semester
Diploma in Technology – Civil Engineering	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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)	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 3-year Diploma in Technology (Chemical Engineering) KCSE mean grade of C+ with at least C+ in Maths, Physics, Chemistry and Biology/ Group III/IV/V 	4 Semesters • (Evening) Tuition: 90,000/= per sem 12 Semesters (Day) 90,000/= per sem
Bachelor of Engineering in Mechanical Engineering	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 3-year Diploma in Mechanical Engineering Or Equivalent KCSE mean grade of C+ with at least C+ in Maths, Physics, Chemistry and Biology/ Group III/IV/V 	7 Semesters • (Evening) Tuition: 90,000/= per sem 10 Semesters (Integrated programme) 90,000/= per sem
Diploma in Technology (Mechanical Engineering – Options: <ul style="list-style-type: none"> Manufacturing Engineering Industrial Plant and Energy Engineering Automotive and Autotronic Engineering Structural Fabrication and Metallurgical Engineering Refrigeration and Air Conditioning Engineering; Mechatronic Engineering 	<ul style="list-style-type: none"> KCSE mean grade of C (Plain) with at least C in English, Maths, Physics/Physical Science 	9 Semesters (Integrated programme) 36,000/= per sem.
FACULTY OF APPLIED SCIENCES AND TECHNOLOGY		
SCHOOL OF MATHEMATICS AND STATISTICS		
Bachelor of Philosophy in Technology (Applied Statistics)	<ul style="list-style-type: none"> Higher Diploma In Applied Statistics / Actuarial Sciences 	4 Semesters • Tuition: 70,000/= per sem.
Bachelor of Science in Mathematics	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> KCSE Mean grade of C+(Plus)with C+ in Maths, Physics, Group II/Group III and 2nd Group II/III or Group IV/V 	
Diploma in Technology: (Options) <ul style="list-style-type: none"> Applied Statistics Actuarial Science 	<ul style="list-style-type: none"> 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) <ul style="list-style-type: none"> Computer Technology Information Technology Communication and Computer Networks 	<ul style="list-style-type: none"> 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) <ul style="list-style-type: none"> Computer Technology Information Technology Communication and Computer Networks 	<ul style="list-style-type: none"> 3-year Diploma in Technology or Equivalent 	5 semesters (TU-K) 6 Semester (TEP) • Tuition: 70,000/= per sem.
Diploma in Technology in: (Options) <ul style="list-style-type: none"> Computer Technology Information Technology Communication and Computer Networks 	<ul style="list-style-type: none"> KCSE mean grade of C- including C- in Maths, Physics 	8 semesters • Tuition: 36,000/= per sem.

COURSE TITLE	REQUIREMENTS	DURATION/FEES
SCHOOL OF PHYSICAL SCIENCES AND TECHNOLOGY		
Bachelor of Technology in Applied Chemistry (Industrial Chemistry)	<ul style="list-style-type: none"> 3-year Dip. Tech in Analytical/Industrial Chemistry or equivalent qualification KCSE Mean grade C+(plus) with C+ in Chemistry and cluster subjects 	6 semesters Tuition: KSH70,000/= per semester 10 semesters Tuition: KSH70,000 per sem
Bachelor of Philosophy in Technology in Applied Chemistry (Analytical Option) (Evening Only)	<ul style="list-style-type: none"> Higher Diploma in Applied Chemistry (Analytical option) or Equivalent qualification. 	4 semesters; Tuition: KSH70,000/= per semester
Diploma in Technology in Analytical Chemistry	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 3-year Diploma in Technology in Environmental and Resource Management 	7 semesters • Tuition: KSH70,000 per sem.
Diploma in Environmental Resource Management	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> KCSE mean grade C+ (Plus) With C+ in Maths, Physics, Eng. Chem/Biology 	10 semesters • Tuition: Ksh. 70,000/= per sem.
Diploma in Technology: Technical and Applied Physics	<ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> Applied Biology Biotechnology (Industrial and Medical Options) Food Science & Technology 	<ul style="list-style-type: none"> Higher Diploma in: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> Applied Biology Biotechnology (Industrial and Medical Options) Food Science and Technology 	<ul style="list-style-type: none"> 3-year Diploma in Technology: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> Applied Biology Biotechnology (Industrial and Medical) Food Science and Technology 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> Industrial and Applied Biology Biotechnology Biochemistry Food Science and Technology Ecology and Conservation Biology 	<ul style="list-style-type: none"> KCSE C- (Minus) with C- in Maths/Physic, Chemistry and Biology or a Certificate or E equivalent 	7 semesters • Tuition: Ksh. 36,000/= per sem.
SCHOOL OF HEALTH SCIENCES AND TECHNOLOGY		
Bachelor of Technology in Community and Public Health	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Higher Diploma in Medical Laboratory Science 	4 semesters • Tuition: Ksh. 70,000 per sem.
Bachelor of Technology in Medical Laboratory Technology	<ul style="list-style-type: none"> 3-year Diploma in Medical Laboratory Technology 	5 semesters • Tuition: Ksh. 70,000 per sem.
Bachelor of Science (Nutrition and Dietetics)	<ul style="list-style-type: none"> KCSE Mean C+ (plus), with C+ in Bio, Chem, Physics/Geo/Maths and Group I/II/III/IV/V 	11 semesters (Integrated programme) • Tuition: Ksh. 70,000 per sem.

COURSE TITLE	REQUIREMENTS	DURATION/FEEES
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 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/FEEES
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	• KCSE Mean Grade C- (Minus) and at least C- (Minus) in Eng/Kisw, Group II/Maths, Group III and Group II/IV/V or relevant certificate	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 III/Maths, Group III, and Group II/IV/V • 3-year Diploma In Counseling Psychology or related discipline	9 Semesters Tuition: 60,000/= per sem 6 Semesters Tuition: 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 • Certificate in Criminology, Criminal Investigations, Disaster Management, Criminal Justice OR Crime Prevention or its equivalent	7 semesters • Tuition: 24,000/= per sem.

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 TU-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.

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THE TECHNICAL UNIVERSITY OF KENYA

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