DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

UNIVERSITY

Souvenir Magazine



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Vice Chancellors Message



Welcome to the 12th Graduation Ceremony of Dedan Kimathi University of Technology. This year marks yet another milestone in the University calendar and the first in-person graduation that the University has held since the pandemic. I want to extend my congratulations to the students graduating. Kudos for your unrelenting determination to forge forward and complete your studies even as the world was battling with this global pandemic. You have completed this important phase of your career development journey and now you are ready to embark on the next phase, where you get to apply the knowledge that you have acquired.

The University has remained committed to providing quality education, research, and technology for national development. We have further enriched our mix of programmes with the approval by CUE of M.Sc. Telecommunication Engineering, M.Sc. Biomedical Engineering, M.Sc. in Machine Tools Design and Manufacturing, M.Sc. in Civil Engineering, B.Sc. in Chemical Engineering, B.Sc. in Geology, Bachelor of Technology in Building Construction, and M.Sc. in Forensics and Security being the latest to meet the CUE accreditation threshold.

For DeKUT to continue providing relevant education and ensuring that our graduates are employable and succeed in their careers, the University has increasingly worked with the industry and government; and deliberately created opportunities to expose students to the world of work. This year, the University has made tremendous gains in, one, establishing partnerships with industries; two, creating centers in the University where staff, students, and the industry can work together to develop new products and solve problems of the industry; and three, short courses both for our students and people working in industry and government for technology transfer, expanding the range of academic programs offering to cover niche areas. The goal is to enrich the study environment for our students at the University and to also create a vibrant R&D and Innovation ecosystem. In addition to enhancing the preparation of the DeKUT students for the world of work, a vibrant R&D and Innovation system is critical to the success of the Dedan Kimathi Science and Technology Park.

Over the years, the University has also formed strategic alliances and collaborations with various like-minded organizations to ensure that we empower our graduates with superior skills and the requisite mindset that they need to deal with the challenges they face. The University has signed various MoUs agreements with several organizations/ institutions. To list but a few we have an MoU with the Center for International Migration, the Africa Bio-Energy Programme Limited (AFBL) and Biogas Kenya with who with have partnered with to set up a center of excellence in biomass energy under the Center for Biomass Energy Studies (CBES). The Deutsche Gesellschaft fuer Internationale Zusammenarbeit (GIZ) recently signed a grant agreement for the Green Climate Fund (GCF) project which is being implemented by the DeKUT Centre for Biomass Energy Studies.
We have also signed an agreement with the United Nations Educational, Scientific and Cultural Organization (UNESCO) to establish a UNESCO Chair on Anticipatory Socio-Technical Systems at the University. The University has established the Office of Career Services geared towards helping students explore and develop their careers through industry linkages and mentorship programs. The office will also support alumni by continuously engaging them and helping them secure employment where possible. The University has also established the Office of Financial Aid Office (DeFAO), which also has a robust work-study program that allows students to work while studying within the University to earn an income and learn from various departments and offices.

Congratulations to the class of 2022. Go forward and conquer the world.

Dedan Kimathi Science and Technology Park (DeST-Park)

NOW ON THE WORLD MAP AFTER BEING ADMITTED AS A MEMBER OF THE INTERNATIONAL ASSOCIATION OF SCIENCE PARKS AND AREAS OF INNOVATION (IASP)-A SIGNIFICANT MILESTONE FOR THE PARK



DMM building under construction in the Dedan Kimathi Science and Technology Park

Dedan Kimathi University of Technology (DeKUT) aims to enter into the league of Entrepreneurial Universities, which leverages on research and innovation to create intellectual property (I.P.) rights, spin-off companies, and entrepreneurship to promote the sustainable economic growth of the University and the Nation. In line with this, we are spearheading the establishment of a Science and Technology Park (S.T.P.), which will be an engine for innovation, incubation, development, and commercialization of technology. This will stimulate the growth of entrepreneurship, which will drive job creation in the country and develop self-reliant youths.

DeST-Park covers three thematic areas, which are: Agri-tech (Food bio-resources and natural products value-addition), Information and Communication Technology (I.C.T.), and Design, Materials, and Manufacturing (D.M.M.). So far, DeST-Park has attracted three anchor clients; Snowcap Development Limited, Asytec, and Semiconductor Technologies Limited. DeST-Park is now on the world map after being admitted as a member of the International Association of Science Parks and Areas of Innovation (IASP)-a significant milestone for the park. IASP is a global network of science parks and innovation zones that brings together professionals who manage Science, Technology, and Research Parks (S.T.P.s) and other areas of innovation to provide services that help members grow and succeed. They also connect members to a one-of-a-kind software called Strategigram, allowing users to examine the park's strategic profile.

> **DMM building under construction in the Dedan Kimathi Science and Technology Park**

Konza Technopolis Limited and Kenya-AIST

UNIVERSITY TO HOST AND MENTOR KENYA-AIST IN KONZA TECHNOPOLIS



Principal Secretary, State Department of University Education and Research Amb. Simon Nabukwesi and Vice Chancellor, Dedan Kimathi University of Technology, Prof. Ndirangu Kioni) visit the Korea Advanced Institute of Science and Technology (KAIST) on a mission of establishing Kenya-AIST

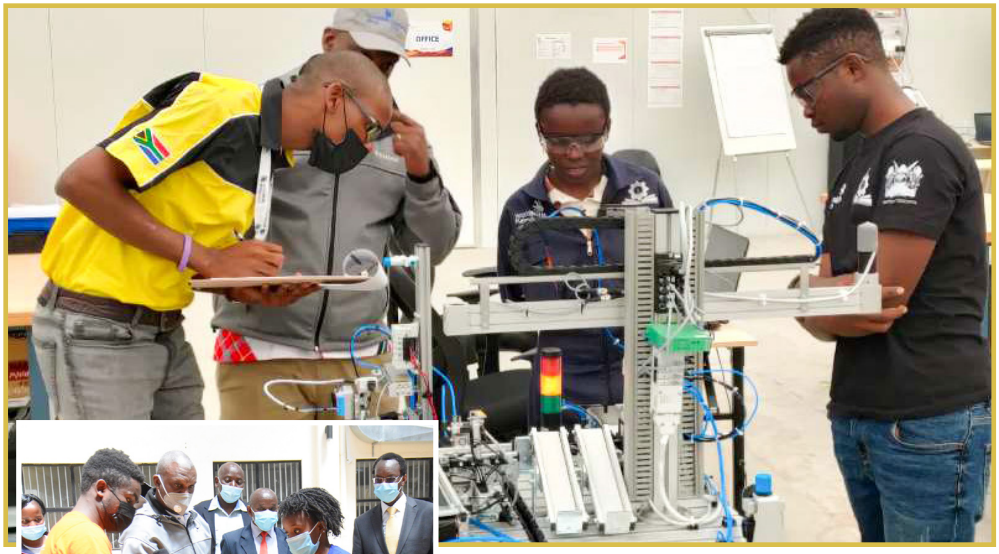
Recently, Kenya and Korea signed an agreement to establish the Kenya Advanced Institute of Science and Technology (Kenya-AIST), which is being constructed at the Konza Technopolis. The Institute will be a replica of the Korean Institute of Science and Technology (KAIST) and will provide specialized research and training in various leading-edge engineering technologies. This will help the country fast-track modernization of its economy. Kenya-AIST will be started as a constituent University College of DeKUT and then rapidly transit into a specialized University. To this end, members of the DeKUT Senate participated in a Kenya-AIST stakeholder forum in Naivasha covered by the Amb. Simon Nabukwesi, Principal Secretary, State Department for University Education and Research.

Speaking during the stakeholder forum Principal Secretary (PS) said the Ministry is determined to nurture Kenyans from the youngest possible age to pursue careers in Science, Technology, and Innovation (S.T.I.) and develop capacities and competencies in technology management as reflected in the new competency-based curriculum being rolled out. "We will want to leverage on the skilled graduates from KAIST-Kenya to make the most of the potential of Science and Technology," Amb. Nabukwesi said, adding, "This model worked in South Korea, and we believe, with the right procedures and strategies, Kenya will benefit and transform the region's narrative."

He said the completion of the Institute will make it a masterpiece exemplifying the Centre of Excellence in science and engineering as envisioned in the second and third medium-term plans of Vision 2030.

> **"This model worked in South Korea, and we believe, with the right procedures and strategies, Kenya will benefit and transform the region's narrative"**

DeKUT PRIVILEGED TO PARTICIPATE IN THE WORLD SKILLS COMPETITIONS IN NAMIBIA





The WorldSkills International competition is the peak vocational skills competition for young people worldwide. It was started in Spain in 1950 and is currently in 85 countries across the globe. On October 13, 2020, WorldSkills Kenya (W.S.K.) was ratified as the 84th state to host skills competitions. On March 15, 2022, we hosted the World Skills Germany team to assess our readiness for the World Skills Competitions, which were held in Namibia from March 28, 2022. This came after Dedan Kimathi University of Technology (DeKUT), as one of the approved TVET institutions by the Ministry of Education, Science and Technology, was tasked by Technical and Vocational Education and Training to organize World Skills Kenya Competitions in Mechatronics, which attracted 17 colleges, both TVET institutions and technical universities, and emerged as one of the winners.

This pilot exercise was to enable WorldSkills Kenya to enhance the country's national competition frameworks ahead of the WorldSkills Africa 2020-2022 international skills competitions. The WorldSkills Africa 2020-2022 initiative focuses on collaborative mentorship between WorldSkills International Experts and National Experts (African TVET institutions), inclusiveness and human-centred design, and knowledge exchange on occupational standards, skills training, test project development with social values, and skills competition management. The objective is to ensure that the skills competition is inclusive and addresses the social challenges faced in Africa.

The WorldSkills Africa Competition commenced on March 28, 2022, under the theme "Promoting Skills Development in the 21st Century for Sustainable Economic Growth and Africa Ownership". Over 100 participants from 11 African countries competed in 16 different technical and vocational trade areas at the event, including an international conference and career exhibition. Maxwell Kipruto, a Dedan Kimathi University of Science and Technology Mechatronics Engineering Student, was one of Kenya's representatives at the continental competitions, finishing third. He was picked after winning the World Skills Competition in two categories: university students and TVET students.

> **"We are proud to be a part of the Kenyan team that competed in the World Skills Competition Africa in Namibia."**

Buy Kenya, Build Kenya

DeKUT, IN COLLABORATION WITH ASYTECH, DEVELOPS A PUBLIC-PRIVATE JOINT PARTNERSHIP PROJECT AIMED AT MANUFACTURING LAPTOPS



DeKUT, in collaboration with ASYTECH, has developed a Public-Private Joint Partnership project aimed at manufacturing laptops. ASYTECH, an international company that deals with assembling electronics, laptops, computers, and other ICT-related components, was set up in April 2020 to address the issue of overdependence on global products and platforms that stifle socio-economic growth in Africa.

The two have set up an assembly plant to provide African solutions for African problems. The partnership intends to exploit the ability to develop products and solutions that are specifically suited for the income levels and tastes of the African market and create an entire ecosystem that allows from design up to local manufacturing of Made in Kenya for Africa.

The laptop project entails designing and assembling various versions of laptops and related accessories at DeKUT. It will involve DeKUT staff and students collaborating with partners and investors in the Science and Technology Park. It is envisaged that the project will impart the required skills and experiences among DeKUT staff and students as far as electronic product design and development is concerned.

The project's main objective is to develop a cost-effective laptop that will be used to access education materials by all DeKUT students and other Kenyan students at various levels of education, for use by staff members for teaching and research, and the general public. This will lead to increased access to university education, affordability, and quality of university education in Kenya and therefore contribute to the achievement of S.G.D. 4.

The benefits of this project are that every student at DeKUT will have their own laptop, learning will still be ongoing despite the disruption of the normal university calendar, One of the Big 4 Agenda (Local Manufacturing) will be realized, and we will also have achieved the Buy Kenya Build Kenya initiative, There will be growth in numbers of the DeKUT graduates being employed., Research and development on the advancement of these devices and other relevant areas of study will be conducted.

The University put out an Expression of Interest for interested financial partners who are willing and capable of financing the project and offer financial support for the purchase of the laptops for staff and students through a financing model that will allow staff to pay through a checkoff system and have the cost embedded in their school fees for the students.

The University has created awareness of the laptop project among staff, students, and the general public through social media platforms, emails, and word of mouth. An open day was organized and held on March 1, 2022, and from 8th to 11th March 2022, the laptops were showcased to everyone. Students and staff well received the laptops. The laptops are expected in May 2022. The Directorate has been working with students on the marketing drives and designing of posters

RIMCL working together with the Marketing and P.R. department, has developed a marketing strategy to publicize the laptop project through an aggressive online campaign to our students, staff, and the general public. Some of the strategies have been rolled out, and it is generating a lot of enquires from Kenyans on how to purchase the laptops.

Directorate of Research Innovation Management and Community Linkages



DeKUT Office of Career Services

PREPARING STUDENTS FOR WORLD OF WORK AND ENTREPRENEURSHIP

By: Esther Kaburu



Launch of Office of Career Services

There is a Swahili saying that goes like this: "Ukiona Vyaelea Jua Vimeundwa." This saying alludes to the meaning that everything that exists or that we see afloat has been created/ made; it did not just happen. How does this apply in the world of career development and growth?

We live at a time where unemployment rates are going up every day. Young people are going through education even to the University level and ending up in the streets desperate for job opportunities. However, a few of the graduates somehow land on very lucrative opportunities and can grow their careers straight from the University/ College/ Institution of Higher Learning. While this can be called luck, it is also greatly about preparedness, exposure, and positioning. That said, DeKUT Office of Career Services (DeKUTOCS) exists to equip DeKUT students with these elements and help prepare them for the world of work and entrepreneurship, exposing and linking them to this world and helping them position themselves.

Officially launched on February 4, 2022, as the first office of career services in the country to be launched by the Principal Secretary, State Department of Post Training & Skills Development, Mr. Alfred Cheruiyot, DeKUTOCS continues to create an ecosystem and framework that enables mentoring, career guidance, and counselling, skills, and professional development, industrial exposure and linkages and empowerment of our students to support the University in her mission of producing holistic graduates who are well prepared for the world of work and entrepreneurship and are leaders in various fields and sectors.

Six months since its establishment and barely three months since it was launched, DeKUTOCS has achieved the following:

- **Developed operational/guideline manuals for Class Advisory and coordination of External Attachments and Academic/Industrial Visits/Field Trips.**
- **Mainstreamed career guidance by incorporating the advisory and coffee hour sessions in the semester timetable.**
- **In the process of creating various manuals that will form part of the DeKUT Career Handbook.**

- Has sensitized individuals and departments to contribute to career guidance, leveraging on the human resource already within the University.

- Has established a Career Services webpage hosted in the University website domain to provide career guidance information, e.g., recorded webinars on career, opportunities available for attachment, internship, scholarships, etc. Within the site, there is, among other things: a Career Blog that aims to reach to students on matters relating to career through article form and in an easy to digest format, DeKUT Spotlight Feature which tells the success stories of students, alumni and also staff in line with career progression, entrepreneurship and various strides.

- Has started a webinar series on various relevant topics pertaining to career guidance; the webinars are recorded and are made available to a larger audience of students via email and are also uploaded on the office website. The webinars are scheduled and take place fortnightly.

- Has created a monitoring and feedback system in order to get feedback from both students and the Schools and Institutes. This is to ensure that career guidance programs are implemented and run effectively and efficiently.

- Has built and is continuously enriching her databases for employers and other partners/ stakeholders with a view of working together for the betterment of DeKUT students and graduates; this is with respect to providing coaching and mentoring services, student jobs/work-study/ attachment, and internships opportunities, etc.

- Continues to invite external speakers from the industry for career talks with a view of ensuring that our students are guided throughout their study period.

- Has worked with various companies and created partnerships that have led to internship opportunities for our students and opened doors for job opportunities.

- Has partnered with Ajira Digital Program to train students and start a DeKUT Ajira Digital Club through which students will be sensitized to and exposed to online/ digital jobs and empowered to venture into this space for career development as well as economic value.

At the DeKUT Office of Career Services, we wake up every day thinking about how best we can prepare our students for the changing world of work and entrepreneurship as we look to inspire and empower them to build a career they love and help them achieve a successful and fulfilling career through which they can positively impact the world. In this endeavour, we call on partners who share in our vision.

We can be reached via the email address careerservices@dkut.ac.ke.



Students posing for a photo after the Ajira Digital Program Training

Authentic Leadership

A WAKE-UP CALL TO UNIVERSITY GRADUATES

By; Prof. Theuri M.M., Director, Institute of General Studies



1.INTRODUCTION

Those of us who have gone through university education are called to lead the society that is, in most cases, diluted and polluted with socio-economic issues and evils such as rampant corruption, social injustice, sexual molestation, and many unethical behaviours. This is the world in which the new graduates encounter, and if not well prepared as leaders, it can become very frustrating to the point of one loosing hope in life. Therefore, it is important to educate ourselves on what leadership is and how one would be able to lead or become a leader in society.

As a topic, leadership has been of interest to philosophers and historians since ancient times, most of them emphasizing on good and accountable leadership across the board. Consequently, various scholars have defined leadership as an act of influence, a lead that directs others to achieve their laid down objectives. Others have argued that leadership is a human act that brings about proper strategic goals, vision, and mission as laid down in a particular written document such as the constitution and the statutes of a nation.

One should note that scientific approaches have given over 350 definitions of the term leadership, with none of them been connecting leadership and its effect in a technological world. For instance, how would one argue about the current war engineered by Putin against Ukraine? What about the Iraq war and the allegations of biological warfare? The Israelis bombs destroy the Palestinian's homes and settlements using guided missiles, yet the world leadership has been maiming about the situation. This short article intends to summarize the effectiveness of proper leadership as it should be understood by those who have had the opportunity to attain a University education.

2. LEADERSHIP AS AN INFLUENCE

Leadership is an influence relationship among leaders and their followers who intend fundamental changes that reflect their purposes (Joseph C. Rost, (1993), Leadership for the Twenty-First Century, Westport, CN., p.102). As a result, leadership involves influence and occurs among people whose intention desires significant changes supported by shared purposes. In his works, Peter DeLisle defines leadership as the ability to influence others, with or without authority. This is the definition from which this short article has relied, particularly on the interpersonal relationship in areas of leadership. If leadership is the ability to influence others, how often do we influence others in our communities as graduates across the board? Does our level of education impact the communities we come from? At what point does a university graduate become an agent of change in society? Hence this article is on leadership that influences the community.

3.INTERPERSONAL EFFECTIVENESS

Interpersonal effectiveness is the ability of an individual to perform or do a particular action, thus influencing others competently. In this aspect, leadership becomes a direct function influenced by three interpersonal effectiveness: awareness, ability, and commitment



Awareness: In leadership, one has to be aware of the surroundings and the tools to influence others without hurting them. In a technological world, one has to be aware of the dangers posed by nuclear and biological warfare. Therefore, awareness is the state of consciousness and the ability to recognize yourself, others, events, and situations in real-time. Thus, awareness is the ability to assess the impact of actions on situations and others and be critically self-reflective. Consequently, and in a technological world, awareness is a development process that functions experience, communication, self-discovery, and feedback. Hence as a graduate, you are challenged to be aware of your surrounding and the effect you can bring in transforming your community.

Ability: This is the power to learn and understand the world's technical issues. The ability to lead is a function of influence hence comprising of the ability to;
• communicate
• resolve conflicts
• solve problems and make informed decisions.

As a team member, a leader influences others in a collaborative effort to find better ideas or solve problems.
Commitment: For leaders, the "one thing" that leads to maturity is the fully aware recognition that one's decisions make a difference, both positively and negatively, in the lives of others and that any attempt to solve problems might have a decided negative impact on some while helping others. Remember, in a no-win situation/ scenario. One must still make a hard decision. This is more applicable in the current world, where technology has affected how we communicate. As a new graduate, it will be upon you to show the society that you are committed to change, transform, and become an agent of development in your respective region.

4. ATTRIBUTES OF A LEADER

There are various attributes that leadership requires, among them;

• Guiding Vision:
Effective leaders know what they want to be done and have the strength of character to pursue their objectives in the face of opposition and despite any possible failures. Thus, an effective leader will always be able to establish achievable goals and a clear guiding vision for the community.

•Passion and Integrity:

Effective leaders believe passionately in their goals, have a positive outlook on who they are, and love what they do. Hence, their passion for life is a guiding star for others to follow because they radiate and enrich the promise of their vision. Ethical living and practice is the hallmark of a responsible leader. Because they know who they are, effective leaders are aware of their weaknesses and strengths. They live by doing what they have promised and can be held accountable for their deeds. Integrity leads to productive development in the community.

• Honest and Trust:
Building trust is key to effective leadership in society. Leaders convey an aura of honesty in both their professional and personal lives. Thus, honest leaders earn the trust of their followers and act on their behalf of them.

• Curiosity and Risk:
Effective leaders are learners. Leaders aspire to know more to take charge as they pursue their goals. They wonder and ask questions about themselves, the environment, and their government. In the process of being curious, effective leaders take calculated risks when necessary to achieve their objectives. They do not run away from making mistakes to learn and explore opportunities to do better.

•Dedication and Charisma:
An effective leader is a dedicated one who works assiduously on behalf of the community, thus giving oneself to the task when necessary. An effective leader cultivates a charismatic spirit, portraying maturity, respect for others, compassion, a fine sense of humour, and love for humanity. The result is that leaders have the capability to motivate others to excel in what they do in a given community. Hence despite the difficulty, it entails.

• Listening and Respect:
Effective leaders listen to their flock, which is the most important attribute. How many of our leaders listen to us despite the fact that they are what they are because of us? Respectively listening to divergent views will bring about people's development. Respecting other opinions gives birth to generative leadership.

CONCLUSION:

Call to leadership; authentic leadership is attainable. Those of us who have been given the opportunity to learn and graduate from prestigious universities like Dedan Kimathi University of Technology must be ready to lead the people to greater heights. Yes, you have graduated at different levels but at the end of the day, are you ready to lead and lead effectively? What leadership attributes will you portray in your respective community to show that you are different from "the educated masses" whose lives hardly reflect their training as engineers, business people, nurses, criminologists, and other scientists?

Standing out

PERSONAL - BRANDING FOR A SUCCESSFUL CAREER



Derick Njeru Mbogo

Director, Vijana Uongozini Kenya

Attention today is one of the scarcest resources out here. Getting the proper attention from the right people can make a career. Whether you are looking for a job, growing your network, or simply trying to build your career, you need to be memorable and make meaningful connections, but how do you do so in such a crowded place as the job market? Here are some ways to take meaningful action.

Be more Gravitational. You need to be someone that other people want to be around. This you can easily do by being more optimistic and energetic. Also, be a listener and get to know and connect with the people around you; building your brand, ironically, is all about others more than it is about you. Let's say that positive vibes are the best and only vibes you need.

Be brave and take a leap of faith. To stand out, you need to step into the unknown, take up that challenge even when you feel like you aren't fully prepared, and understand that you can develop your skills as you go. Be ready to step up, step out and step forward.

Strive to be Authentic. It's easier than it sounds. You just need to be you. Learn from others and emulate the best of what you've learned while being authentically you, 'Be yourself, everyone else is taken '(Oscar Wilde). It may not seem so, but the market wants the real you, look in and discover your unique value and embrace what makes you special and sets you apart from the crowd. Understand that we are most drawn to relations with people who are unapologetically themselves, and be that person to others.

Last but not least, *be reliable and always have something to offer.* Your brand should be built on the value you add to others, and how best you deliver value. Roll up your sleeves and follow-through; by doing so, your network will be able to count on you and you on them. Finally, be predictable and consistent. This is the key to building an excellent and reliable network.

To sum all this up in one sentence, Self-branding has no set of formula. It's a mindset. Build on your relationships and networks, for your network is truly your net worth.

To sum all this up in one sentence, Self-branding has no set of formula. It's a mindset. Build on your relationships and networks, for your network is truly your net worth.

DeKUT Film, Animation and Gaming Hub

NURTURING CREATIVITY, INSPIRING DREAMS, AND PROMOTING SUSTAINABLE TALENTS AND SKILLS THROUGH TECHNOLOGY



In an effort to transform Kenya into a newly industrialized middle-income country and provide solutions to global problems, we launched the DeKUT Film, Animation, and Gaming Hub in 2020 to provide a platform where young people and interested parties in creative art can use technology in film making and participate in the production of digital media products that can be marketed widely hence creating employment opportunities. The hub was officially opened by the Cabinet Secretary, Ministry of I.C.T., Innovation and Youth Affairs, Hon. Joe Mucheru, following the signing of a Memorandum of Understanding between the University and the Kenya Film Commission.

This year, in collaboration with the University, the hub signed a Memorandum of Understanding with the County Government of Nyeri to train 50 participants from the age of 16-70 years in Film Production, 2D Animation, and 3D Animation. The five-day training, sponsored by the County Government of Nyeri, Department of Tourism, Trade, and Cooperatives Development, aimed to empower people in the creative industry under the theme “Nurturing Creativity, Inspiring Dreams and Promoting Sustainable Talents and Skills through Technology.”

The Capacity Building Training for Visual Artists in Animations and Creatives training came to an end on Friday, March 18, 2022, with a closing ceremony that was presided by H.E Governor Mutahi Kahiga. The training was officially opened by the Chief Officer, Department of Trade, Tourism and Cooperatives Development in Nyeri County, Mr. George Mwangi. Others present were DeKUTES MD Dr. Paul Sang from DeKUT, Director DeKUT S.T.P. Ruth Muriithi, Manager Film Hub Anne Kimani, Trade Chief Officer George Mwangi, political advisor Washington Kariuki among others.

Coffee Flavoured Yoghurt

RESEARCH BEHIND THE COFFEE FLAVOURED YOGHURT

By; Jonah Mbae Mwaja (IFBT)



Yoghurt is a nutrient-dense food rich in prebiotics and probiotics in its standing. Did you know coffee extract is rich in polyphenolic compounds, and it can influence the characteristics of yoghurt? Did you also know these compounds possess several health benefits? Polyphenolic compounds in coffee possess several health benefits due to its antioxidants activity. Through a research I carried out on the viability of Lactic Acid Bacteria (L.A.B.s) in coffee extract flavoured yoghurt in the Institute of Food Bioresources Technology. When the coffee extract is added to the yoghurt, it brings the product's functionality to the health and functionality in terms of physical characteristics of yoghurt. This research was geared towards qualifying coffee flavoured yoghurt still upholds probiotic status after adding the extract. I am glad that I could achieve all my objectives in this research through the infrastructure that DeKUT has laid in terms of research equipment in our various laboratories. It was evident that coffee extract improves the survival of lactic acid bacteria due to the presence of phenolic compounds in coffee.

This was ascertained by studying microbial growth during the 28 days of yoghurt storage. It was evident that microbial counts were maintained above 106, which denotes that the yoghurt met standards for a probiotic product.

According to the Kenya Bureau of Standards, yoghurt should not have yeast and moulds above 100cfu/ml, which poses a danger to food safety. However, there was a negative effect on yeast and mold survival in the same yoghurt studied. The presence of polyphenolic compounds in coffee extract had a detrimental effect on the growth and survival of the fungi identified. On the other hand, polyphenolic compounds influenced coffee-flavoured yoghurt's viscosity and syneresis. The science behind this was the formation of protein-phenol linkages forming a network that held together with the casein micelles, thus promoting the thickening of yoghurt. This phenomenon promotes the trapping of whey inside the network, thus reducing syneresis in the coffee-flavoured yoghurt. In addition, the product was also found to possess functional properties that are necessary for the prevention of lifestyle diseases, including different types of cancers, due to its antioxidant activity.

Coffee flavoured yoghurt could be used as a precaution to prevent chronic diseases that ravage the society we live in. Regular consumption of yoghurt promotes good health by enhancing the survival of gastrointestinal organisms (probiotics) even after the administration of antibiotics. At DeKUT, coffee-flavoured yoghurt is available. Make it a routine to purchase and consume coffee-flavoured yoghurt to promote good health in your life.

In conclusion, coffee-flavoured yoghurt is a functional food that will revitalize and refresh consumers as they enhance the well-being of their health. Therefore, the stabilizing effects of the extract helps to eliminate the use of thickeners and stabilizers regularly used to control syneresis experienced in regular yoghurts. The move also eliminates the use of artificial food flavours and colours that threaten human health. Buy DeKUT yoghurt build DeKUT.

Geochemistry

APPLICATION OF GEOCHEMISTRY IN MINERAL EXPLORATION

By Purity Mwihaki Kamau- Geothermal Training and Research Institute

Chemistry is a scientific discipline that can be applied in many areas of industry and research. When applied to earth-based activities, it is known as Geochemistry. Geochemistry as a tool can be used in mineral exploitation to determine the distribution of chemical elements in the rocks and soils of the earth. Different parts of the earth bear varying amounts of chemical elements, depending on the earth's forming processes involved in forming them. The chemical elements are distributed in the materials of the earth (rocks and soils) following a certain ratio. As per the ratios, rocks and soils with elemental amounts are said to have normal or background concentrations. However, some rocks and soils appear to have higher amounts of chemical elements than the expected and known ratio distribution and are termed anomalous concentration. These rocks are enriched in the element in question or the target element. This is caused by processes that result in settling the elements at a particular part of the earth due to favourable temperature, pressure, and chemical conditions in the part of the earth.

After collecting soil and rock samples from the earth and carrying out laboratory analysis on the samples, the results are plotted on a colour map, which is used to discriminate the areas with background concentration from those with anomalous concentrations, as illustrated in Figure 1

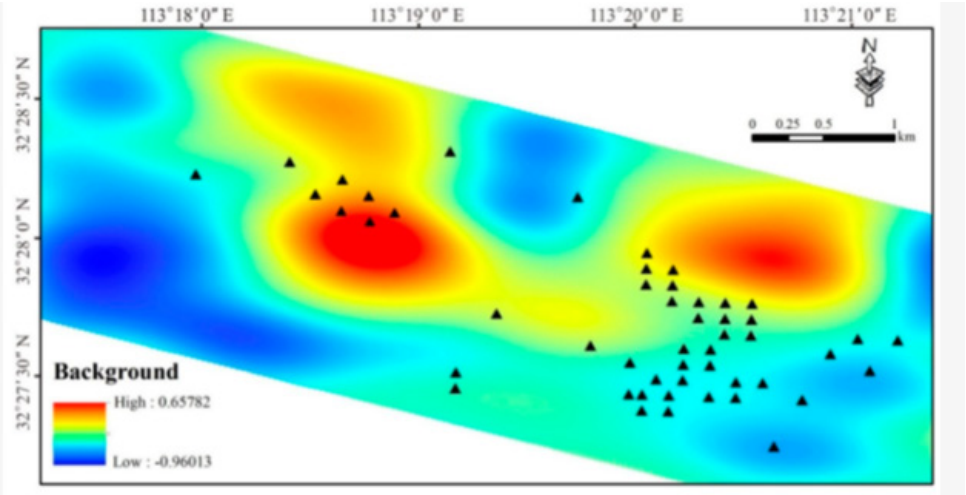


Figure 1: Background concentration of gold in rocks and soils samples

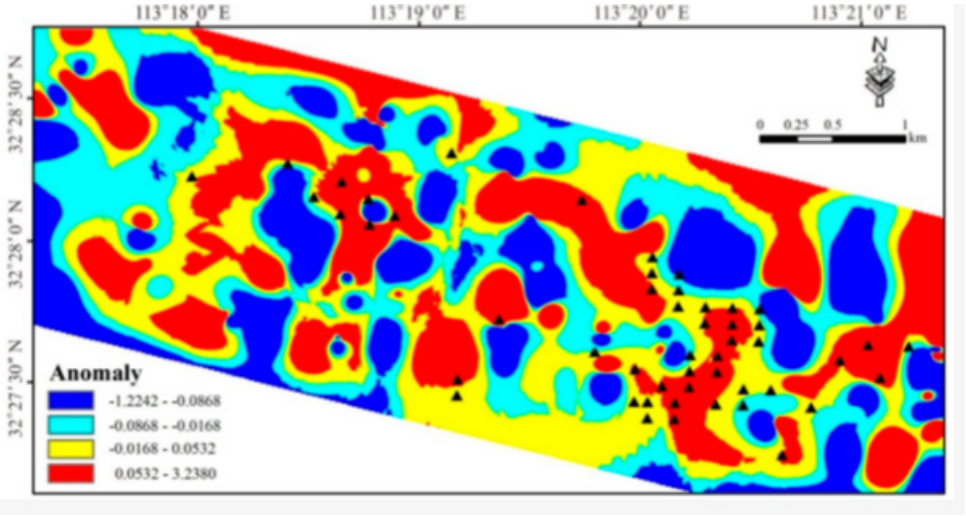


Figure 2: Anomalous Concentration of gold in rocks and soils samples

The normal/background concentration may be high or low, as indicated in Figure 1, depending on the area's different rocks and soils. When all the background concentration is eliminated, the anomalous concentration is revealed in Figure 2.

The enriched or the anomalous amounts of the target element are revealed with different areas having different chemical element enrichment; some are higher than others indicating variation in the processes and the conditions existing at different parts of the area under consideration. The area in red forms the high anomalous mineral occurrence. The objective of the application of geochemistry in mineral exploration is achieved when these high anomalous areas or locations are identified. Hence, information about the location and value of the mineral ore deposit is obtained during the exploration phase, and geochemistry is one of the methods used. Other investigations include the use of geophysics and drilling test boreholes.

The next stage is then mining and processing. Mining is the extraction of rocks or soils containing minerals from the earth. Before a mining company starts the mining venture, activities associated with site clearing, preparation of infrastructure and E.I.A. studies are undertaken. Minerals are rarely found in a pure state on the earth. They invariably contain impurities. The mineral process includes physical and chemical separation techniques such as gravity concentration, magnetic separation, electrostatic separation, flotation, solvent extraction and precipitation. Wastes from these processes include waste rock dumps, tailings, and leach materials.

Geophysics in serving society

A CASE STUDY FOR GROUNDWATER EXPLORATION

By; Jonah Mbae Mwaja (IFBT)

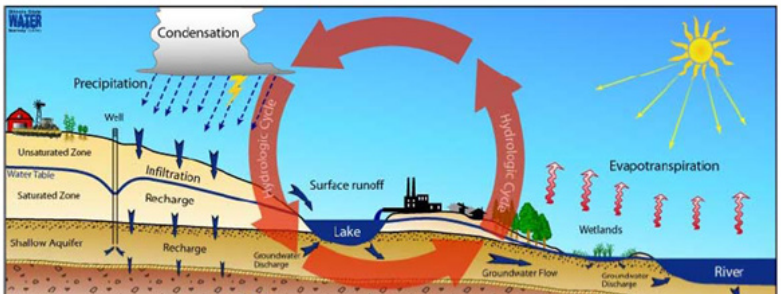


Figure 1: Rock cycle illustrating groundwater recharge and aquifer

One of the United Nations Sustainable Development Goals (S.D.G.s) is to improve clean water and sanitation. This aims at ensuring the availability and sustainable management of water and sanitation for all. Further, prevention and management of the COVID-19 pandemic relied on sanitation, which encouraged good handwashing behaviour. For these and other reasons, there is a need to have a reliable source of water. Groundwater is one of the water resources that can help us achieve this.

Groundwater is water that occurs on the sub-surface and is stored in tiny spaces (pores) between rocks, soil particles, and rock formation fractures. It is part of the rock cycle (see Figure 1). There is a need to explore groundwater and its availability, quantity and quality for consumption. The use of geophysical tools can achieve this. The methods are used for groundwater resource mapping, monitoring groundwater recharge facilities, and evaluating groundwater quality.

Groundwater resource mapping has been carried out successfully using various groundwater water exploration methods, such as seismic, gravity, electrical, and electromagnetic. The use of these geophysical techniques helps us reduce the risk of dry drilling boreholes and reduce the cost of poor groundwater production by identifying the location of the groundwater zone (aquifer). The methods complement each other. However, electrical and electromagnetic methods have had the most use in groundwater exploration owing to their capability. Many of the geological properties relevant to hydrogeologies, such as porosity, permeability, and water salinity in the rocks, directly correlate to electrical properties associated with this method.

The electrical resistivity method, in general, involves inducing a current into the ground through a pair of current electrodes (A.B.) and measuring the potential drop (ΔV) through a pair of suitably implanted potential electrodes over a set of distance (see Figure 2). The resulting potential is used to measure the resistivity of the subsurface or ground conductivity.

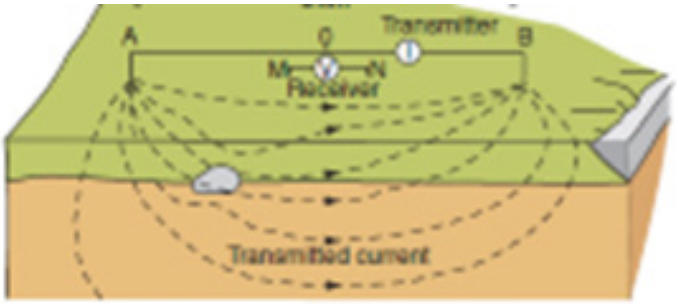


Figure 2: Schematic representation of electrical resistivity transmitted current and measured voltage

Different rocks and fluids will behave differently when conducting the electrical current. Formations with high clay content and contaminated fluids with high saline content will show low resistivity/high conductivity compared to rock formations such as granite. The resistivity of groundwater will vary from 10 to 100 ohm-m depending on salinity, as indicated in Table 1. The methodology can also be used to infer the depth of the aquifer.

Type of water	Resistivity (ohm-m)
Precipitation	30 - 1000
Surface Water in Igneous rock	30 - 500
Surface Water in Sedimentary rock	10 - 100
Ground Water in Igneous rock	30 - 150
Ground Water in Sedimentary rock	> 1
Sea Water	0.2
Fresh Water	10 - 100
Drinking Water (max salt content 0.25%)	> 1.8
Water for irrigation and stock watering (max salt content 0.25%)	> 0.65

Biofuel From Used Cooking oil

A HEALTHY INITIATIVE

By Githere Njenga - Geothermal Training and Research Institute



People and businesses are on their toes to finding an eco-friendly way of creating power and alternative clean energy sources for vehicles, machinery and equipment. This results from the apparent harmful effects on the environment of burning fossil fuels.

Is there a better way to fuel our cars than relying on petrol and diesel? It's to the excitement of many trending electric vehicles, some using solar and others using liquid hydrogen! But this option depending on most countries is not as cost-effective as diesel and petrol. Then we could use something cost-effective and give us some good mileage! We could use something readily available for fuel! Something that nobody wants.
The solution is vegetable oil!

When vegetable oil is recycled (or you can buy unused cooking oil from a supermarket that requires no recycling.) for use as biodiesel, it can power vehicles and industrial machinery. With a diesel engine, you could use cooking oil to power it without much modification to the engine.

Could this solution work for petrol engines?

It's hectic to achieve combustion with a spark ignition when using a biofuel. Fuels lines and pumps in petrol engines are not intended to handle this kind of fuel; thus, the sensors used to determine fuel ratios can't cope with the variations.

What would be the danger of getting used oil and directly using it in a vehicle's diesel engine?

Used cooking oil tends to be thick, sticky, and contains impurities from the cooking process. This will alter the rate at which it will flow within the engine, which lowers the engine efficiency.
The vegetable oil also tends to solidify and cool in the engine and other vehicle parts. Thus, the flow of fuel is minimized, and this causes the engine to damage and burn. The problem of vegetable oil has a very high viscosity as compared to diesel has solutions such as;

• Mixing the vegetable oil with more conventional fuels such as petroleum diesel. This reduces the clogging problem but does not obliterate it.

• Transesterification involves mixing the vegetable oil with alcohol and sodium chloride, producing methyl ester/biodiesel and alcohol as a by-product. Although this process has a problem when the chemicals are incorrectly mixed, and creating a chemical of any kind can be very dangerous
•Using a two-tank system that uses petroleum diesel to start the engine will heat the engine and stop the engine and drive all vegetable oil out of the engine. Vegetable oil in the other tank is heated to about 60-degree Celsius. This is the most utilized method. Some of the modifications done on the engine are the installation of new injector nozzles with a filtering system to make sure that only clean fuel gets into the



chamber, glow plugs used to ignite fuel in cold start conditions could effectively improve performance is made for use with vegetable oil, more heating of vegetable oil can be accomplished b2y placing the coolant lines in contact with vegetable oil lines.

What will you be saving when using vegetable oil as fuel rather than diesel?

A good question, right? The cost of vegetable oil is approximately equal to that of diesel.
Its price is dependent on the locality or ability of someone to buy it in bulk from some source, such as a restaurant. In some cases, restaurants can just give out this used oil to dispose of it.

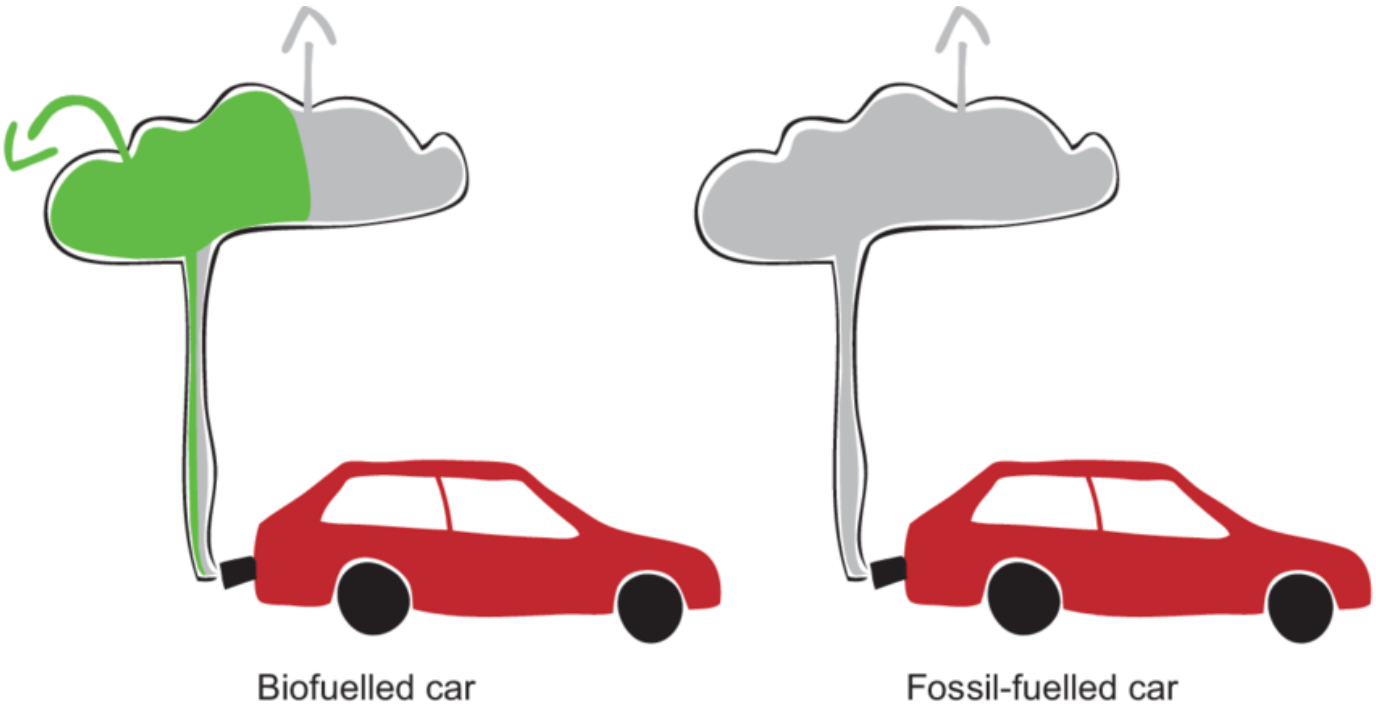
Then what do we gain by running a vehicle on a biofuel?

A vehicle running on Biofuel (vegetable oil) emits a lot of carbon dioxide and minimal carbon monoxide. Carbon dioxide is not harmful as plants will use it for photosynthesis, and carbo monoxide level reduces in the atmosphere. Statistics show that it produces 75% fewer greenhouse gases.

Other key advantages of using biodiesel as fuel are:
- Its environmentally friendly
- Can help reduce dependency on foreign oil
- Lubricates the engine, thus minimizing engine wear
- Can be used with any diesel engine with less or no modification.
- It's safer than conventional diesel.
- It reduces waste as used oil can be recycled to fuel
- Its produced domestically, thus less transportation pollution

You will find used and recycled cooking oil in electric vehicles to power at charging points.

Special thanks to Micro-Grid Academy for the program: Basic components of Decentralized energy systems (D.R.E.) and community needs assessment and St. Kizito technical training institute for accommodating us on the field visit. St. Kizito is a home for a generator that runs on recycled cooking.



The Dekut Start-Up Centre (DeSTAC)

TRANSFORMING RESEARCH INNOVATIONS INTO START-UP COMPANIES!

Prof. Peter N. Muchiri, Director-DeKUT StartUp Centre (DeStaC)

One may wonder, what happens to the research output generated by the universities every year? What about the promising innovations and business ideas generated by the students? Well, Dedan Kimathi University of Technology (DeKUT) has answered those questions!

The University Management, in fulfilment of the University's strategic plan, has been working towards making DeKUT an entrepreneurial university, which turns the research output into commercially viable innovations, and eventually supports the innovations towards the establishment of startup companies and fledgling enterprises (see Fig 1) by student innovators.

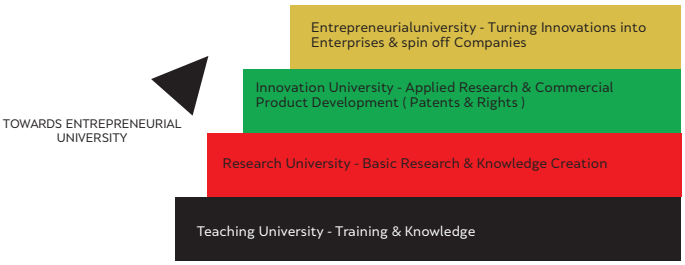


Figure 1: The University roadmap towards being an entrepreneurial University

Towards making DeKUT an entrepreneurial University, the management has established the DeKUT Startup Centre (DeStaC). Among the objectives of DeStaC is to enhance the entrepreneurial ecosystem in the University, where innovators will find an avenue to commercialize their ideas and launch startup companies. Further, DeStaC will provide a support process that accelerates the successful development of startups and fledgling companies by providing an array of targeted resources and services. This framework will enable the University to support and take the viable startups through the acceleration process and graduate them into financially viable and freestanding companies.

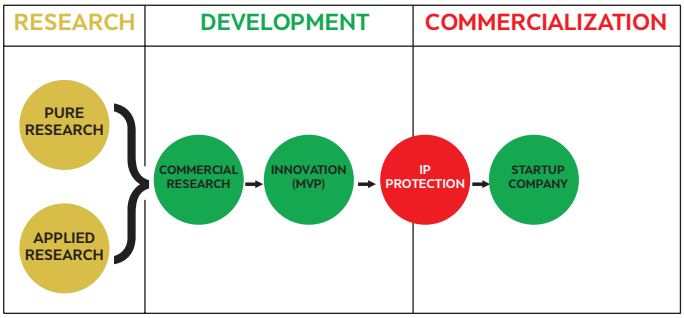
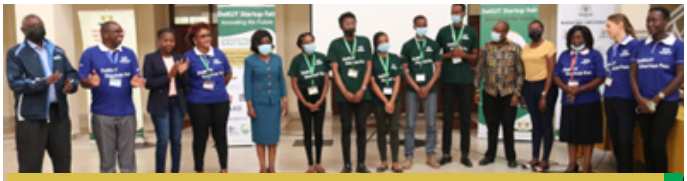


Figure 2: The DeKUT Startup Cycle for commercialization of innovations

The DeKUT Startup Centre (DeStaC) has been mandated to oversee the entire startup cycle (see Fig 1) towards commercialization of innovation, and protection of intellectual property (I.P.), up to the support of startup companies. The research work taking place in the faculties may be mainly classified as pure or applied research. But to develop commercially viable products or innovations, termed minimum viable products (M.V.P.), commercial research and development are imperative. A minimum viable product (M.V.P.) is a version of a product or innovation with just enough features to be usable by early customers as a commercial product, who can then provide feedback for future product development. Once this M.V.P. is established, I.P. protection is sought through patent. Finally, the Startup Company is established to support the commercialization of innovation. DeStaC has embarked on this journey and has vetted several innovations, of which some have been admitted to the Startup centre for commercialization support.



The award of the winners of the DeKUT StartUp Fair, organized by DeKUT StartUp Centre (DeSTaC), in collaboration with Saarland University, Germany

In order to promote an entrepreneurial mindset among students, DeStaC, in collaboration with the DeKUT's Centre for Innovation & Entrepreneurship Management (CIEM), DeKUT Incubation Hub (DeHUB) and Dedan Kimathi University – Science & Technology Park (S.T.P.) organized a Start-up fair where student innovators and entrepreneurs came together to ideate, form teams and launched their business ideas, with the aim of commercialization. The Startup Fair was supported by DAAD, Germany, within the project titled "Development of entrepreneurial universities of Kenya" (DePUK), which DeKUT implements in collaboration with Saarland University, Germany, Chuka University and Karatina University.



Student innovators pitching their business ideas in the DeKUT Startup fair organized by DeStaC.

Through the established entrepreneurial ecosystem, DeKUT endeavours to promote the potential of Startups to create jobs, commercialize new technologies, and strengthen the national economy. Thus, the DeKUT Startup Centre will provide an ecosystem that promotes the identification, enrolment, support, acceleration, and establishment of startups to contribute to attaining national goals.

Centre For Biomass Energy Studies

Dedan Kimathi University of Technology

ABOUT

The Centre for Biomass Energy Studies (CBES) is an autonomous, self-sustaining body under Dedan Kimathi University of Technology's GREEN Institute.

CBES specializes in research and development (R&D) in biomass biochemical conversion technologies, biomass thermal-chemical conversion technologies, biomass-based chemical production technologies, waste treatment technologies/circular production/economy and bioenergy with carbon capture and storage (BECCS) technologies.

Key research focus areas include biodiesel, fuel ethanol, biomass pyrolysis and gasification, biomass gasification and power generation, synthesized fuels, municipal solid waste (M.S.W.) treatment, and utilization, amongst other areas.

Besides research and development, the centre also carries out projects in:

- Capacity development through approved and accredited technical and professional education and skills training, seminars, workshops, and conferences
- Biomass fuels strategy (sustainably managed woodlands, sustainable consumption) development and implementation
- Biomass-based thermal (steam, hot water, hot air) energy systems design, simulation, performance audit and optimization, inspection, certification, and other services.
- Biomass resources mapping and potential evaluation
- Biomass projects carbon offset assessment
- Policy, legal and regulatory support on biomass fuel projects
- Knowledge management and awareness-raising amongst stakeholders
- Investment and business promotion along the biomass energy value chain
- Green economy advancement

FLAGSHIP PROJECTS

Water and Energy Resources Efficiency and Circular Production in Tea Processing Factories in Kenya

Water and Energy for Food (WE4F) and CBES have partnered to implement a two-year project supporting water and energy efficiency measures in selected tea factories and circular economy models for tea processing. The project aims to reduce water and energy usage during tea processing. This will conserve forests and reduce greenhouse gas emissions.
These aims will be achieved by developing low-tech wood seasoning shade, energy and water management solutions, and an Internet of Things (IoT) integrated technology. For the production of optimal wood fuel, the seasoning shade will adopt the greenhouse tunnel design, while the IoT integrated technology will adopt Smart Metering and assessment of water consumption.



A low-tech wood seasoning shade at Iriaini Tea Factory Co. Ltd. designed and devel

Efficiency Gain and Productivity Improvement of I.C.S. Production Centres in Kenya, Under the GCF Project-Promotion of Climate Friendly Cooking in Kenya and Senegal

CBES and EnDev Kenya are working jointly to professionalize the I.C.S. production centres and create awareness for consumers (users of Jikos) in Kenya. The project will professionalize I.C.S. production centres by assessing the needs of all existing production centres, procurement and provision of professionalization kits and investment packages. The project will also offer I.C.S. production training using improved technologies, processes, materials, and health and safety guidelines. To achieve women's empowerment, the project aims to build capacity and meet their needs as they predominantly participate in the cooking energy sector. This will promote clean cooking environments by reducing emissions, improving health and providing opportunities for women to engage in income-generating activities.



Cookstove liners at a production centre

Small Scale Mapping

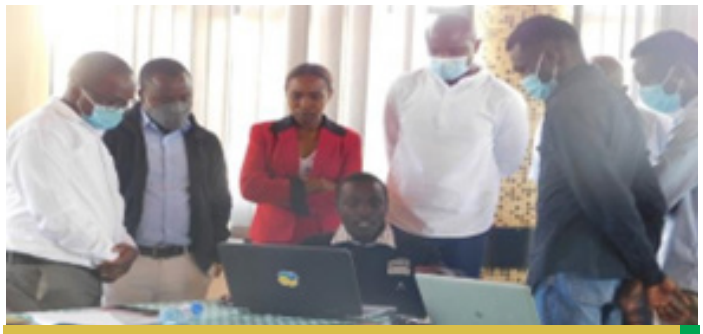
USING A. I AND M.L PROJECT

The project, funded by Kenya Space Agency, aims to map small-scale crops using Artificial Intelligence/ Machine-learning algorithms that will enable farmers to monitor crop health and crop yield and consequently increase productivity efficiently. This ensures food security in the country and is a big win in the agricultural sector. Agriculture, precisely small-scale farming, is the backbone of the country's economy as many crops such as maize, wheat(cereals), beans, potatoes and vegetables are planted by farmers. Machine learning algorithms, specifically Random forest, have been implemented to make this happen. Crop type classification, crop yield, crop area and crop health can now be determined efficiently, and this is used to monitor the general productivity.

Dr Kuria has been the project supervisor, and the project is still in progress.



Dedan Kimathi Lecturers, Kenya Space Agency Team and Dedan Kimathi Students working on the project.



A demonstration by Luke Toroitich to the Kenya Space Agency team on how the small scale crop mapping works.



The team working on the project. (From left to right: Lawrence Kimutai, Jackline Tum, Luke Toroitich, Emilio Kariuki) . Wayne Gitau is also part of the team.



Jackline Tum explains how small scale crop mapping goes about to the Kenya Space Agency.



Jackline Tum explains how small scale crop mapping goes about to the Kenya Space Agency.



The students in an interactive session with the Kenya Space Agency Team.



Lawrence Kimutai collecting data from the field using the developed mobile app for field data collection.

Student names involved in the project:
1. Lawrence kimutai -Gegis 3.2 currently on attachment
2. Luke Toroitich -G.I.S 3.2 currently on attachment
3. Wayne Gitau -G.I.S 3.2 currently on attachment
4. Jackline Tum -E.E.E 3.2 currently on attachment.
5. Emilio Kariuki- C.S 1.2

Sports

PROMOTING A SPORTS CULTURE AT DeKUT

By Edward Wambugu



DeKUT hosted Kings of Rugby KUSA Central Region Circuit

DeKUT is a prominent university in sports and games. The University has established a sports and games department under the students' welfare directorate to ensure students get games kits, balls, other gaming equipment and sufficient funding. With the convenience of modern and well-upgraded pitches, DeKUT has become one of the leading sports centres. Having pitches for every sport and a recently improved state of the art ground, the University has the aptitude to host tournaments contentedly.

The University hosts significant tournaments in the region and inter-university tournaments every year. Sports develop students holistically as they engage in different sports activities and impart different valuable traits enhancing personality development to the participants.



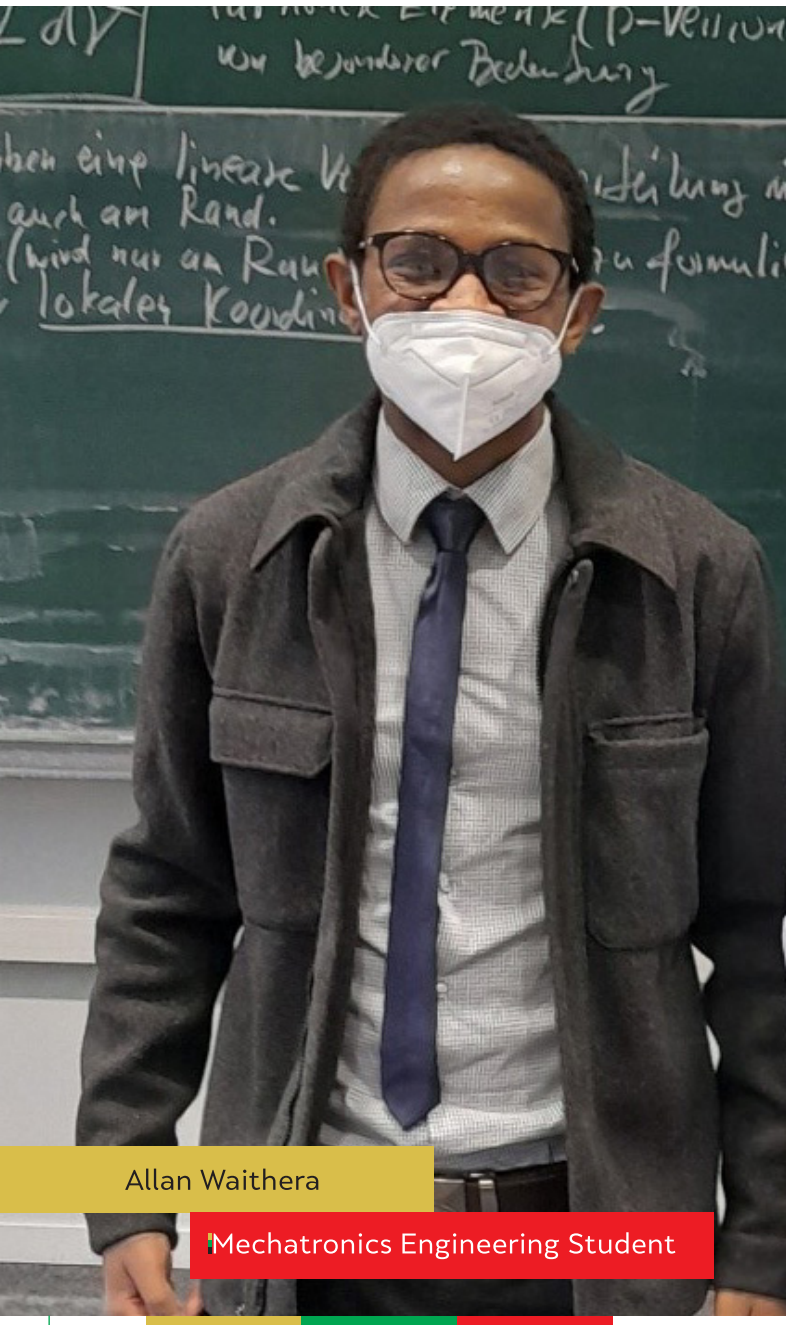
DeKUT hosts sports activities such as rugby, football, hockey and volleyball teams. The University hosts the Mt Kenya rugby tournament every year. On March 4 2022, the University hosted the 11th Kenya University Sports Federation (KUSF) women's championship with main games such as hockey, table tennis, netball, volleyball and basketball. With over ten universities partaking in the tournament on March 7 2022, DeKUT took position three in scrabble, table tennis, and athletics.

The university routines sports to hearten personal growth, nurture students and staff interactions and promote a healthy lifestyle among students and staff. On December 11 2021, the University hosted the Kenya Universities Sports Association tournament, and the university staff flogged teams from Chuka university, K.U., Meru and Embu university in various games. The University used the contest to accentuate about inter-university interactions and health safety.

The University promotes other gaming activities such as hikes, bicycle racing and climbing Mt Kenya. The activities are meant to increase cohesion in the University and, at the same time, make use of students' leisurely time and endow it with beneficial means. Sports and games keep students from activities and events that diminish their life quality such as drug abuse and needless partying. Consistent games and sports endorse talents and improve students' health and academics.

International Exchange Programmes at DeKUT

STUDENTS' TESTIMONIALS ON INTERNATIONAL EXCHANGE PROGRAMMES OFFERED AT DeKUT



Allan Waithera

Mechatronics Engineering Student

My name is Allan Waithira. I am a fifth-year student pursuing a Bachelor of Science in Mechatronic Engineering. I was privileged to undertake my attachment at Karlsruhe Institute of Technology in Germany under the IASTE program. Germany is a great country with beautiful people, places, and culture. Being the biggest economy in Europe, Germany is a top destination for many scholars, tourists, entrepreneurs, and diplomats. During my internship, I worked as a research assistant. I researched an upcoming technology for analyzing Non-uniform Transformational Field Analysis (NTFA) materials with a professor's guide. Studying behaviours of different materials help scientists and engineers design the best products in aerospace, automobile, and electronics, to mention but a few consumer markets. \
Apart from the research, I immersed myself in German culture. Although Germans are generally stereotyped as racists, my experience revealed a different perspective. I met kind and polite Germans and other Europeans. I got a chance to work with students from Serbia, India, and Canada. Blessed with picturesque vegetation, enveloped in the magic of the Autumn season, Deutschland glimmers with beauty between August and November. The forested forests give a carpet of rusty yellow leaves. You slowly watch the subalpine hill fade into dry vegetation during winter as the trees lose their leaves between December and March. Watching this transition with each rising sun was inexplicably amazing (Although the sun barely comes out during winter!).

I got to know a lot of people from other countries. I shared my culture with them and learned a lot from them. Diversity is a heritage that, by cultural/education exchanges, the world learns to appreciate and tolerate people's cultures. I also visited France and Switzerland, which are part of Schengen. By having a visa to a member country of Schengen, you can enter another member country under the same umbrella without getting another visa.

In a nutshell, IASTE offers you an international opportunity to see the world through the eyes of a global citizen. Working with researchers at the international level paves the way for advancing one's career. We can finally understand our niche as Kenyans and Africans by interacting with new technologies to realize an intelligent future. Meeting new people gives us a chance to experience a new lifestyle and a challenge to embrace our own cultures. I am thankful to the International Office DeKUT, the IASTE committee at DeKUT and the L.C. at K.I.T. for their invaluable support in making dreams come true. Indeed, this experience has changed the rest of my life.



Amon Cheruiyot

5th-year B.S.C. Mechanical Engineering.

MEINE DEUTSCHE ERFAHRUNG,

I was attached at the Institute under the DAAD-IAESTE internship program, and the project I was assigned involved: Familiarization with multi-step additive manufacturing technologies, Involvement in the construction and setup of an extruder print head to mix a binding media with raw powder material; Programming of the control unit for an extrusion-based printer prototype; Fabrication of green parts (samples consisting of binder and powder material) for material testing. The internship involved 3D printing, an additive technology used to manufacture parts. It is 'additive' in that it doesn't require a block of material or a mold to manufacture physical objects; it simply stacks and fuses layers of material. It is used extensively in the engineering industry, particularly for prototyping and creating lightweight geometries. It's typically fast, with low fixed setup costs, and can create more complex geometries than 'traditional' technologies, with an ever-expanding list of materials.

Germany is a highly industrialized country with brands like Siemens, BMW and Mercedes dominating the market, and as a mechanical engineering student, it's the place to be. I gained new professional skills and was introduced to emerging technologies (3D printing, integrating Marlin Firmware using VS Code) and practical application of multi-step sintering processes starting from solvent to thermal de-binding concepts theoretically covered in the curriculum.

In keeping with IAESTE's motto, "Taking Cultural Experience Beyond Kenya's Borders",. I have been an IAESTE member for 4years, and in this period, I made friends and made links; thus, during my stay in Germany, I had a decent number of contacts. I met people from all nationalities. I never struggled since Munich is a cosmopolitan city and English is widely spoken. I tried food from all over the world and particularly liked German food and was impressed by how punctual everyone was. I also travelled to 6 other countries in my free time. The European Union is a brilliant idea, and I think the East African Community should integrate even more.

Munich is a historic city and the capital of Bavaria. I toured various attraction sites like Marienplatz, Nymphenburg Castle, Olympia Park, BMW Museum, Alte Pinakoteck Art Museum, English Garden, and Deutsches Museum, and hiked the Bavarian Alps and least forgetting Dachau Concentration Camp, a somber memorial for all the victims of WW2 horrors.

I travelled to the German cities of Bochum, Essen, Cologne, Bonn, Dresden (hiked the Saxonian Swiss) and lastly, Nuremberg. I also travelled to; the Hungarian cities of Debrecen and Budapest, briefly stopped at Prague, Czech Republic, Bratislava Slovakia, Venlo Netherlands, Vienna, Austria, and visited Warsaw, Poland. On Christmas break, I spent with a friend's family in Schladming, Austria, in the Alps and went skiing; I experienced Christmas away from home for the first time but never felt homesick due to the warmth and great hospitality of the Austrian people.

Overall I gained technical skills and was introduced to emerging technologies, experienced new cultures, met new people and travelled even on the backdrop of the COVID 19 pandemic. I have gained more passion and motivation for my aspiration to further my studies in the field (Additive Manufacturing). I would highly encourage all students to apply for the internship.

International Exchange Programmes at DeKUT

STUDENTS' TESTIMONIALS ON INTERNATIONAL EXCHANGE PROGRAMMES OFFERED AT DeKUT



Celestine Kathure Kinyua

M.S.C. Mechanical Engineering
University of Siegen

As an ERASMUS+ exchange student at the University of Siegen – Germany, my time has been a truly enriching experience. The University of Siegen was the most suitable place to conduct my master's research. It is one of the leading research universities in Germany, with well-equipped laboratories, cutting-edge technology, and knowledgeable and supportive supervisors.

The Experience

As a highly acclaimed university with an international orientation, the University is diverse with many international students. Against my expectation, most of the students and some locals are well versed in English. However, knowing the language goes a long way in making your life easier.

I have found and experienced so much more than I anticipated. Not only did I experience different cultures, but I also had the opportunity to appreciate the different approaches to working, studying and day to day activities. I am incredibly grateful for the opportunity, as it challenged me to get out of my comfort zone and be more open-minded.

I appreciate the Dedan Kimathi University of Technology for creating this program. The International Exchange teams in Kenya and Germany for coordinating all logistics and ensuring smooth settling down in Germany. I'm also grateful for the Buddy Program at the University of Siegen. Because through this program, I was able to make new friends who made my time in Siegen delightful.

The exchange program is a remarkable way to see the world, grow academically, experience new cultures and make new connections.



Institute of General studies

UNDERSTANDING THE AFRICAN CULTURE AND HERITAGE THROUGH UNIQUE PROGRAM OFFERED BY THE INSTITUTE OF GENERAL STUDIES (I.G.S)

> "He who knows his past knows his future"

General study is a course taken at Dedan Kimathi University of technology under the department of the Institute of General studies (I.G.S.), starting early last year. Previously it was a Communication skill done only at the first year and first semester level. We are the Pioneers of the course who first take it up to the final year consisting of students from different recognized schools and departments. Another group that joined /2020 is currently in the second year second semester.

"He who knows his past knows his future" is the foundation where this course stands. The course is majorly focused on understanding African culture and heritage. It takes the student in class to rediscover their African contribution to civilization and technology (know-how) and Teleology (know why), which is diversely used today. It unleashes away lies and trauma created in the minds of the African children.

The African culture and heritage study is based on ANCIENT EGYPTIANS CILIVIZATIONS which acted as the centre of the human civilization for what is being studied in all global institutions at secondary and tertiary levels. We Africans are entangled with many difficulties when it comes to solving problems that concern us to the point of begging for the aid, like during the time of the pandemic COVID-19 when none of the African countries discovered their vaccine; the problem is not that we don't have scientists who can give us the solution, but it because many of the Africans minds are enslaved in believing that those Greek or Europeans who are just rebranded our civilizations and made us inferior in matters of the civilizations. Below are some of the African ancient civilizations' disciplines that our ancestors discovered at an early age, which will make us African students know that we can explore all fields of study with no limitations and be independent in solving our problems.

MEDICINES

Ancient Egyptians discovered the medicine essential for health and believed in healing and curing diseases in their bodies without waiting for a foreigner to come and give them a solution. This is evident from the ANCIENT EGYPTIANS MEDICAL PAPYRI, which are now scattered all over the world, including The Edwin Smith medical papyri that contain surgical procedures, the Kahun and the Carlsburg VIII papyrus with gynaecological treatments, Chester papyrus with rectal diseases, the Ramesseum III, IV discussing gynaecological, ophthalmic and pediatric treatments, the Ebers, the Hearst, Crocodilipolis and the Berlin Medical Papyri discussing general diseases and the Brooklyn snake giving treatments for snake bites. Our medical students in our Institutions, if they could know that their own black ancient Egyptians discovered this discipline, will pursue their profession aiming to help their people overcome disease threats in our continents. We end up importing doctors from other continents. In addition, it helps us develop vaccines tested in our laboratory and proven to be safe for human use.

MATHEMATICS

Western nations have a racial belief Africans are disabled when it comes to solving their mathematics problems. This has traumatized the minds of our students willing to pursue mathematics and related mostly when they are in class with white students. The Ancient African discovered many of the disciplines studied in mathematics like Geometry, which is applied in building pyramids, Numerals for counting and numbering of the calendar, and calculus, described as small pebbles used to count days of rainy seasons. This information to mathematics and engineering students will help them prove wrong racial discrimination that Africans are incapable of mathematics.

FUTURISTIC OF THE COURSE

The general studies will play a vibrant role by enlightening the African child about his past, translating into their future. The students should always consider this course along with their professional specialization courses. At least we will develop a certain degree of citizens who have a sense of belonging like the U.S.A., which enrols their students in learning for 45 per cent of humanity and 55 per cent in arts



The Pioneer class of 2022 General Studies 3.1 students

Work in progress

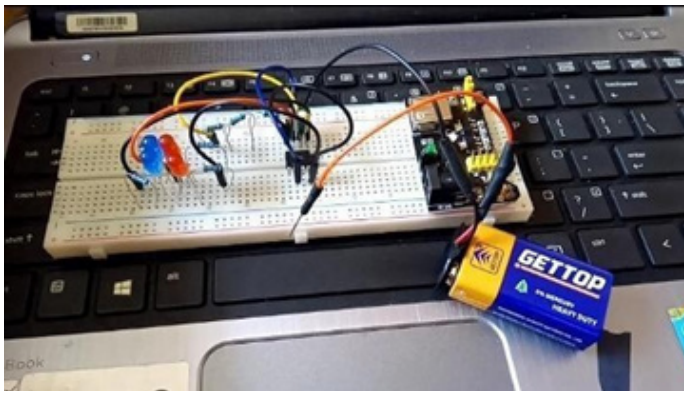
STILL IN PROCESS

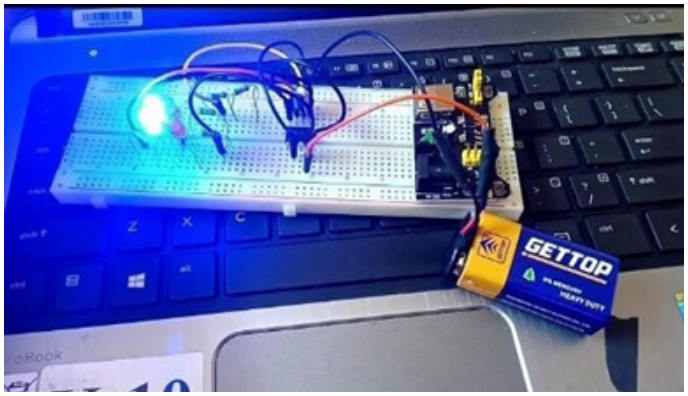
Richard Mwangi Kamanga, Rimwaka's. B.Sc. Telecommunication and Information Engineering

Since joining this great Institution, we have been exposed to a wide range of knowledge and abilities, but Electronics has always piqued my interest and continues to do so in my daily activities. Thanks to the practical sessions, I've learned to appreciate the use of search engines to obtain datasheets for various electronic components indicating their application and functioning conditions.
I have mastered this technique, and I continuously apply it in my projects. I have since made progress by creating projects using components bought from local shops, Nerokas Electronic Shop (https://store.nerokas.co.ke/), Pixel Electrics Shop (https://www.pixelelectric.com/).
Some of the achievements are:

1. Audio amplification using LM 386 and T.D.A. 2030 I.C.s

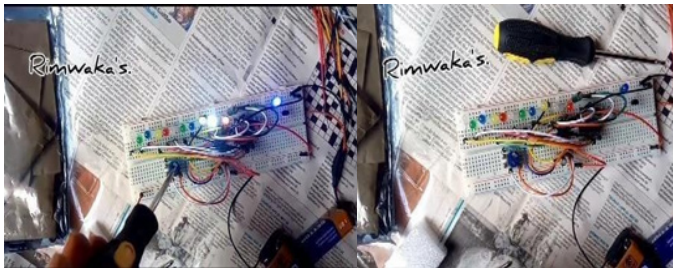
2. Blinking L.E.D.s using 555 Timer I.C.







3. L.E.D. chaser circuit using CD4017



4. Automatic Security lights control using P.I.R. motion detector and relays.



All of this is due to the DeKUT family, who have been helpful and have provided me with appropriate direction. I'm still studying to develop myself and my community at large, which is why I strongly feel that "Better life through Technology" is a lot more achievable through DeKUT.
Are you a technology enthusiast like me? DeKUT is your right answer.
Useful links to videos indicating the progress of the above projects:

https://photos.app.goo.gl/anjqGsbWi2fZMtn49

DeKUT ADA

ALCOHOL AND DRUG ABUSE- PEER EDUCATORS CLUB

By: Shibiriti Calvine Mwanzi

In September 2017, the first Alcohol and Drug Abuse training organized by the University to counter the spread of alcohol and substance abuse among students was conducted.

This was after it was discovered that substance and drug abuse among students was growing at an alarming rate. The trend was affecting both the academic life and the general welfare of the students. Students who were engaged in the vice were not completing their studies. This was worrying.

The first training did not attract many students as anticipated, but the trained group was involved in a peer-to-peer outreach program with the motto, "Reach them before drugs do." By March 2018, the program had attracted more students, and the A.D.A. Club was formed. Later in June, it changed its name to ADA PEER EDUCATORS CLUB and was registered.



ACHIEVEMENTS

Since its inception, over 500 students have been trained on Alcohol and Drug Abuse, with an average of 100 students trained each year. There has been an increase in training per year, from one to three. This has helped us reach more students. Several addiction-related cases have been referred to University Counsellors and the DeKUT Medical Officer, who then referred the cases to rehabilitation centres within and outside Nyeri. After completion of treatment, students resumed their studies successfully. Disciplinary cases related to Alcohol and Substance Abuse have since declined.
Members of the Club have distributed questionnaires for the surveys on drug and substance abuse among students in the University to understand what compels such deadly decisions and mitigate the challenges.
The club has organized activities such as hikes, talks, and debates where students can interact and engage in physical fun activities, including team building that provides an alternative and true sense of happiness to drugs.

DRUG ABUSE PREVENTION STRATEGIES

"Drug prevention "or "drug abuse prevention "has three main components:

i. Demand reduction strategies

These strategies aim to reduce the desire and willingness to obtain and use drugs and prevent, reduce or delay the uptake of drug use. They may include abstinence-oriented strategies.

ii. Supply reduction strategies

These strategies aim to disrupt the production and supply of illicit drugs and limit the access and availability of licit drugs in specific contexts. In the University setting, this includes measures taken to

limit the use, possession, and sale of illicit drugs on University premises.

iii. Strategies to mitigate the adverse health and social consequences of drug use
These strategies aim to reduce the impact of drug use and drug-related activities on individuals and the University community.

CORE FUNCTIONS

1. Carry out public education on alcohol and drug abuse directly and in collaboration with other clubs and societies within and outside the Institution.

2. Coordinate and facilitate public participation in the control of alcohol and drug abuse in the University;

3. To assist and support neighbouring communities in developing and implementing policies, laws, and action plans to control drug abuse.



ADA Training



Teambuilding during ADA hike



A.D.A. Peer talks during a hike



Group debates

DeFAO

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY FINANCIAL AID OFFICE (DEFAO)

By; Majory Nyaga, Head, DeFAO

Dedan Kimathi University of Technology (DeKUT) is committed to timely completion of studies. One of the challenges that hinder students from completing their studies is finances. The University has developed a Financial Aid Office to assist needy students in addressing this challenge. Before the formation of Dedan Kimathi University of Technology Financial Aid Office (DeFAO), these activities were being managed from different offices within the University, which posed a challenge of coordination. DeFAO was established in Mid-September, 2021 as a one-stop-shop for attending to students facing financial challenges. The office explores the possible opportunities available for assisting needy students in bridging their financial gaps. The core mandate of the office is to ensure those with genuine financial challenges are assisted through the financial aid programs available both internally and externally.

Financial Aid Programmes Available within the University

i. Work-Study: This is a robust programme that provides students with an opportunity to work as they pursue their studies. The programme does not only provide them with an opportunity to earn money that contributes to their financial well-being but also provides them with an opportunity to gain work experience for their future careers. This is achieved by placing students in departments of their specialization. Students with diverse interests and talents are also allowed to nurture their ideas into products and services that provide solutions to society's problems, e.g. Students with interests and talents in scriptwriting are placed in the University Film Hub. As we advance, the University seeks to explore more work-study opportunities outside the University.

ii. University Bursary: This is money the University pays on behalf of needy and deserving students towards fully or partially fee payment, depending on the student's circumstances. Advertisement is done, and applicants undergo a due diligence process before the Bursary Award's Committee awards deserving cases. The process is done once a year.

iii. Subsidized Meals. The University Students' Mess sells fresh meals at subsidized prices on a pay-as-you-eat model.

iv. Subsidized Accommodation. Internal hostels are not only serene but also charged at subsidized prices.

v. Staff Donations: University staff members have supported needy students with cash for meals, accommodation, and fees in some instances. Some have forfeited their part-time earnings for this course.

vi. Financial Literacy Training: DeFAO has increased financial literacy training for all students through student forums such as coffee hours, even though it is not a financial aid forum. According to an observation, many students who present themselves as needy have adequate support but lack responsible money management skills.

Financial Aid Programmes from External Sources

i. HELB Loans and Bursaries.: Higher Education Loans Board is a key source of finances for the needy students. DeFAO serves as a liaison between the students and HELB. Individual students are responsible for applying and providing the relevant information needed for assessment and awarding.

ii. C.D.F. and County Bursaries: C.D.F. and County Bursaries contribute substantially towards the funding of students. The office is in contact with over 35 counties countrywide for updates.

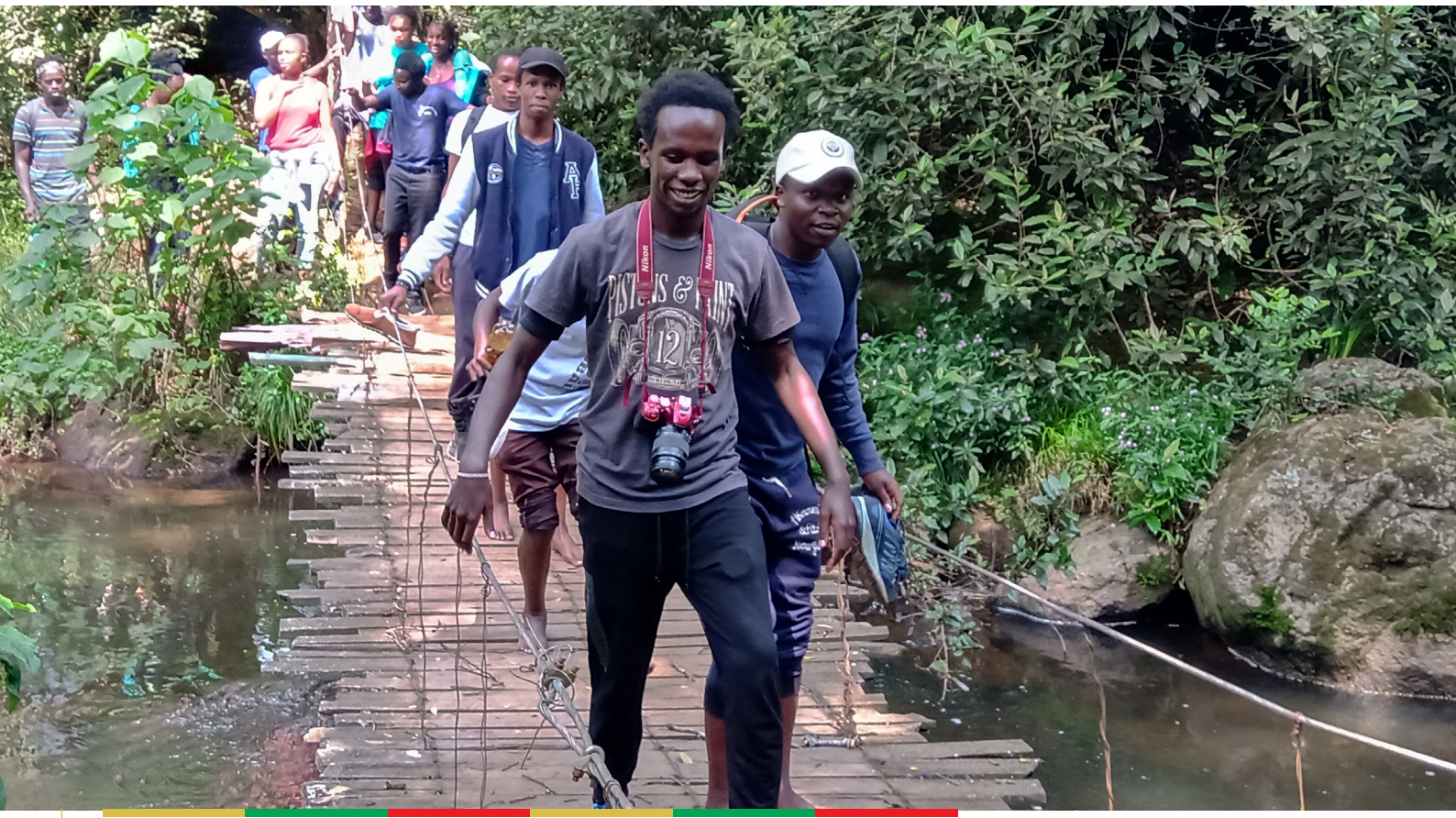
iii.Sponsored Accommodation: Accredited private hostel providers support DeKUT by providing free accommodation to needy students. On average, 30 students benefit from this program annually.

iv.Other Sponsors: A number of students are also receiving support from individual and corporate sponsors. The office is working towards sourcing more sponsors for both restricted and unrestricted funding.

Activities

DeKUT Outdoor Adventure Activities

By: Mwai Kennedy, Outdoor Pursuits' Instructor



Our outdoor programs serve to experientially fast-track embracement of some of the much needed common core values of teamwork, inclusion, diversity, cohesion, and assimilation while immersing our students and staff into a new world of outdoor recreation and adventure lifestyle.

At our outdoor laboratory, known as the DeKUT Challenge Course, the participants are exposed to diverse pre-set challenges that require teaming up to overcome various obstacles that stand in between them and accomplishing the task.

Process versus product:-

They have to strategize, communicate, meet deadlines and be accountable; because what they do and how they do it directly impacts the results. At this point, the participants may realize that although ideas and results are highly valued, the method matters more if we are to have sustainability.

In the excursion and expedition versions, we address vital dynamics readily transferrable to the participants' work areas, learning or living.
In totality, the activities provide us with a classroom and an opportunity where we could construct, orchestrate and instruct some of those dynamics that are readily transferable to the participants' physical and physiological environment, including:-

Cooperation and Teamwork

1. A sense of place
2. Communication and positive interaction with the community
3. Problem-solving, trust, perseverance and endurance at difficult times
4. Risk and Safety margins in the planning and execution of outdoor activities
5. Propagating skills that are the basis of our survival, safety, comfort, thriving and fun

Below is an overview of the internal structure of our outdoor adventure programs:-

1. Climb to educate

This is a dazzling and highly prolific program for our students and staff.
Since its inception at the end of 2014, we have successfully enrolled 250-300 students each year who spend a part of their evenings and weekends working out at the DeKUT Challenge Course and hiking on excursions.
The culmination has habitually been a 4-6 day camping and climbing expedition to Mt. Kenya.



The Mohawk walk

Earlier in February 2020, we had already conducted our initial two local excursions to Nyeri and Nyana hills. Our students were already eying Mt. Kenya season 7 for the year 2020.
That was way back before nature dealt us a curveball in the shape of Covid 19.
And so, when Universities hurriedly closed by March 15, 2020, the chances of summiting Mt. Kenya later in the year became few and far between.

2. Freshmen Bonding & Integration (F.B.I.)

Following the admission of each new and unique generation of first-year students into our University, the Outdoor Section stages an Outdoor Program that experientially fast-track settling and embracing the much-needed values of sense of place, teamwork, inclusion, cohesion and assimilation.
The 2-3 week program subsequently immerses the students into the DeKUT lifestyle of outdoor adventure.
In October 2020, the first-year students first set their foot onto a physical campus!
The F.B.I program, as it is popularly known, kicked off for three consecutive weeks both at the Challenge Course and on three external excursions to Nyeri hills, without any "Noisy" results!
Due to the new protocols on social distancing, only a dismal 620 students participated in the program and were exposed to its core curriculum.



First-year chemistry students and staff during an F.B.I. activity at the Challenge Course

3. Aerobic exercises

The workouts are designed for body fitness as prerequisites to participating in our multi-day expedition to Mt. Kenya.


Climb to educate members on a body-stretching session after classes.

4. Team-Challenge activities

Participants get to recall and utilize several principles and dynamics of physics before navigating gravity and setting the "A-Frame" and its occupant in locomotion.


"A-Frame"-Team challenge- cooperation, trust, communication, problem-solving

Participants get to recall and utilize several principles and dynamics of physics before navigating gravity and setting the “A-Frame” and its occupant in locomotion



“Sunny side up” is a game that requires the participants to thrust the ball upwards, flip the mat and catch the ball back on the underside. To the right is the pop game “Bigfoot”.



We don’t spare our staff members from extreme challenge activities, either

5. Outdoor survival skills



Tent pitching in 5 minutes!

This is about preparing our mountain climbers for entry into a harsh climate through camping and group travelling drills.

6. Local excursions



The instructor points out a nature nugget while students take a water break.

Climb to Educate program schedules at least ten local trips to enable our students to:

(a)Explore the countryside for orientation and recreational purposes. Our First Year students and international staff and students also benefit from an earlier acquisition of a sense of place, learning social/cultural values and their fast settling into our community.



(b) The magnitude of interaction in outdoor settings is overwhelmingly high. The diverse ethnicities and the” international atmosphere” at the Challenge Course & hiking trails propagate the appropriate physiology that enhances learning through peripheral perception, integration and bridging of the numerous cultural gaps, not to mention the overall benefit of physical conditioning and relaxation after a hectic academic day.

7. Membership in the Wildlife Clubs of Kenya (W.C.K.)

This has allowed the students to participate in various wildlife conservation activities.

The "Leave No Trace" (LNT) and "Positive impact hiking and camping" are environmental ethics that have been more caught than taught as portrayed by these Climb to Educate members during an environmental hike in a National Park in August 2019.



Students weigh and dispose of collected plastic trash that littered the national park's trails

8. The International forum

So far, the program, in collaboration with our International Office, has hosted interns from the following countries:-Germany, Austria, the Czech Republic, Poland, Japan, Canada, Switzerland, India, Malawi, Ghana and Sudan.
Apart from participating in our programs, the international students also get opportunities to teach games and specific skills in outdoor activities to the local students. Some of the activities that the students have been able to share or teach are:-

- Acrobatics
- Scottish dance and
- Instrumental music



Maria, a German volunteering intern, leads a duck-walk exercise at the Challenge course

9. The ultimate Mt. Kenya climbing expedition

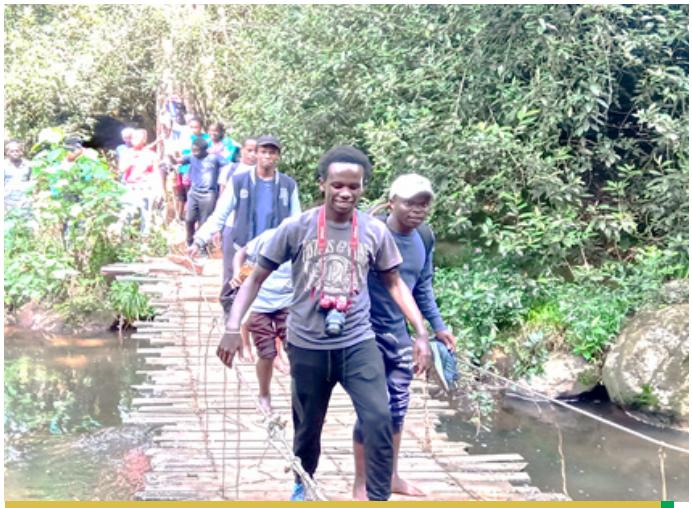


The participants are subdivided into small group expeditions (S.G.E.), here seen traversing the Alpine zone of Mt. Kenya on a five-day expedition.

The statistical bit:-
So far, the program has been successfully launched:-

- 52 local excursions,
- 14 Mt. Kenya multi-day expeditions and
- Several hundred evening exercise activities.
- By April 1 2021, a total of 6137 students and staff had participated in the program,
- 5155 students and staff have joined in the local excursion and
- Nine hundred seventy-six students and staff have climbed Mt. Kenya.

Below are some sampled sights from our trails and excursions



Crossing a wild bridge to access the Maumau caves along Tigithi River, Naromoru



Climb to educate" amphibians" enjoying a water splash during a visit to Mau Mau caves

Through such programs, we can at least hope that in the future, the participants shall see the need to work together in teams to resolve conflict and problems regardless of any boundaries or categories that they may find themselves in and into whichever fields they may venture

Why DeKUT

Why DeKUT should be your University of Choice

The Dedan Kimathi University of Technology is one of the flourishing public universities in the Republic of Kenya. It is named after the famous Kenyan freedom fighter, Dedan Kimathi Waciuri. The University was established in 1972 as a constituent college of Jomo Kenyatta University of Agriculture. In 2012, it was chattered as a fully independent university by the former president Mwai Kibaki.

The University is established on 1000 acres of land, 5km from Nyeri town along the Nyeri-Nyahururu road. The extensive area in which the Institution is set has promoted its expansion and establishment of governmental and private companies. In recent years, the University has been thriving in engineering and technology. This article shall discuss some of the achievements that make Dedan Kimathi University of Technology a university of choice.

Over the years, Dedan Kimathi University of Technology, through the vice-chancellor, Prof Ndirangu Kioni, has been keen on ensuring its vision of "Better Life through Technology". The establishment of the Siemens and robotics department is one of the Institution's steps to achieve this vision. During the Covid 19 pandemic, this department collaborated with the government to produce ventilators that patients with severe breathing problems would use.



A medical ventilator made by the mechatronics department in response to covid 19 pandemic.

The DeKUT Science and Technology Park, established in 2019, has attracted both national and international investors. The recent one is the Semiconductor Technologies Limited, which President Uhuru Kenyatta officially opened on April 26 2021. The company has offered employment opportunities to many graduates from DeKUT as well as other Universities



H.E. Uhuru Kenyatta launching the Semiconductor Technologies Company on April 26 2021.

In 2012, the Institution established a Centre of Advanced Design and Manufacturing Technology in the Mechanical engineering department (ADMAT). From this centre, the students can acquire design, simulation, and fabrication skills, by taking part in most of the projects undertaken therein. In addition, The University has recently established a Centre for Biomass and Energy studies (CBES) under engineer Patrick Kimari. The centre aims to promote environmental conservation by specializing in different biomass technologies.



The ongoing project of the Centre for Biomass and Energy studies (CBES)

In the computer science and information technology department, outstanding achievements have been made from the collaboration of the students, lecturers, and other teaching staff. The latest is the development of the Six Look Above laptops. The laptops, availed with different specifications, was launched on 7/03/2022 and was set to compete with other brands in the market.

The Six Look Above laptop developed by DEKUT C.S. and I.T. department.

In a nutshell, the list of achievements attained is numberless, and the ones named above are just a few. In 2019, the University was ranked the top among the most preferred public University in Kenya. To the potential students with a desire to pursue engineering, business, nursing, or computer science, I.T., among other courses, Dedan Kimathi University of technology should be your University of choice.



NOTES

ACADEMIC PROGRAMMES

SCHOOL OF ENGINEERING

- PhD Mechanical Engineering
- Master of Science in Telecommunication Engineering
- Master of Science in Machine Tools Designs & Manufacturing
- Master of Science in Advanced Manufacturing &Automation Engineering
- Master of Science in Industrial Engineering and Management
- Master of Science in Civil Engineering
- Master of Science in Mechanical Engineering
- Post Graduate Diploma in Technical and Vocational Education Training
- Bachelor of Science in Electrical and Electronic Engineering
- Bachelor of Science in Civil Engineering
- Bachelor of Science in Mechatronic Engineering
- Bachelor of Science in Mechanical Engineering
- Bachelor of Science in Chemical Engineering
- Bachelor of Science in Telecommunication Information Engineering
- Bachelor of Education in Technology (Civil Engineering)
- Bachelor of Education in Technology (Electrical and Electronic Engineering)
- Bachelor of Education in Technology (Mechanical Engineering)
- Bachelor of Technology in Building Construction

INSTITUTE OF GEOMATICS, GIS & REMOTE SENSING (IGGReS)

- PhD in Geomatics & Geospatial Information Science
- Master of Science in Geospatial Information Systems and Remote Sensing
- Bachelor of Science in Geomatics and Geospatial Information Systems
- Bachelor of Science in Geospatial Information Science and Remote Sensing

GEOTHERMAL ENERGY TRAINING AND RESEARCH INSTITUTE (GETRI)

- Master of Science in Geothermal Energy Technology
- Post Graduate Diploma in Geothermal Energy Technology
- Bachelor of Science in Geology

SCHOOL OF COMPUTER SCIENCE AND INFORMATION TECHNOLOGY

- PhD Computer Science
- Master of Science in Computer Science
- Bachelor of Science in Computer Science
- Bachelor of Science in Business Information Technology (BBIT)
- Bachelor of Science in Information Technology (IT)
- Diploma in Information Technology
- Certificate in Information Technology

SCHOOL OF SCIENCE

- Master of Science in Chemistry
- Master of Science in Leather Technology
- Master of Science in Industrial Mathematics
- Bachelor of Science in Industrial Chemistry
- Bachelor of Science in Polymer Chemistry
- Bachelor of Science in Leather Technology
- Bachelor of Science in Actuarial Science
- Bachelor of Science in Mathematics and Modeling Process
- Diploma in Leather Technology

INSTITUTE OF FOOD BIORESOURCE TECHNOLOGY

- PhD in Food Science and Technology
- Master of Science in Food Science Technology
- Bachelor of Science in Food Science and Technology
- Bachelor of Science in Nutrition and Dietetics
- Diploma in Food Science and Technology
- Diploma in Coffee Technology and Cupping
- Certificate in Coffee Technology and Quality Management

SCHOOL OF NURSING

- Bachelor of Science in Nursing (Direct Entry)
- Bachelor of Science in Nursing (Upgrading)

INSTITUTE OF TOURISM HOSPITALITY MANAGEMENT

- Master of Science in Sustainable Tourism and Hospitality Management
- Bachelor in Sustainable Tourism and Hospitality Management
- Diploma in Sustainable Tourism and Hospitality Management

INSTITUTE OF CRIMINOLOGY, FORENSICS AND SECURITY STUDIES (ICFoSS)

- Master of Science in Forensics and Security Management
- Bachelor of Science in Criminology and Security Management
- Diploma in Security Management

SCHOOL OF BUSINESS MANAGEMENT AND ECONOMICS

- PhD in Business Administration & Management
- Master of Science In Economics
- Master in Business Administration
- Master of Science in Supply Chain Management
- Bachelor of Purchasing and Supplies Management (BPSM)
- Bachelor of Commerce (BCom)
- Bachelor of Business Administration (BBA)
- Diploma in Business Administration (DBA)
- Diploma of Purchasing and Supplies Management (DPSM)

INSTITUTE OF TECHNICAL AND PROFESSIONAL STUDIES (ITPS)

- Diploma in Furniture Technology and Interior design
- Diploma in Metal work, Welding and Design
- Diploma in Building Technology
- Diploma in Fashion Design & Interior Decoration
- Diploma in Electrical &Electronics Engineering (Power Option)
- Certificate in Furniture Technology and Interior design
- Certificate in Building Technology
- Certificate in Fashion Design and Interior Decoration
- Certificate in Electrical and Electronics Engineering (Power Option).
- Certificate in Metal work, Welding and Design
- CCNA I, II,III ,IV

PROFFESIONAL AND CERTIFICATION COURSES

- CPA Sec. I-VI
- Certificate in Accounting and Management Skills
- ATD Level I , II & III
- Associate in Procurement and Supply of Kenya (APS-K)
- Certified Procurement and Supply Professional of Kenya (CPSP-K)
- Siemens Mechatronics Systems Certification Program (SMSCP) LEVELS 1-3



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