



MACHAKOS UNIVERSITY

Soaring Heights in Transforming Industry and Economy

BIANNUAL RESEARCH AND INNOVATION BULLETIN



FUNDAMENTAL STATEMENTS

Our Vision

A preferred University of Excellence in Scholarship and Service Delivery

Our Mission

Provide scholarly education through Training, Research and Innovation for Industrial and socio-economic transformation of our communities

Our Identity

Machakos University is an academic institution committed in transmitting knowledge, skills and attitude through science, Technology and Innovation for the benefit of humanity

Our Philosophy

The Philosophy of Machakos University is to provide transformative leadership in Teaching, Training, Research, Innovation, Industrial and Technology transfer for wealth creation

Core Values

Integrity
Accountability
Professionalism
Inclusivity
Creativity
Teamwork
Equity

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Ms. Elizabeth Mbatha - Member

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Editorial

Continuing with our nonthemed issues, we are pleased to present our second issue of the series of Machakos University Biannual Research and Innovation Bulletin. The Editorial Board has again assembled a diverse group of articles that provide something of interest to our varied readership. We would like to thank the University Management and the entire Machakos University fraternity for support towards enhancing research, innovation and technology transfer.

This publication covers a wide range of research, innovation and technology transfer including but not limited to funded research and development programs, scholarly publications, dissemination of research findings and community engagements and innovations. We extend our appreciation for all your efforts and achievements and best wishes to you for your generous support as we pursue our University mission. We hope that you enjoy reading the newsletter and that the ideas can help to shape the current dialogue and strengthen our research and innovation agenda. On behalf of the Editorial Board, I would like to thank our contributors for their efforts and hope our readers continue to find useful and interesting information in this Second Issue.



*Dr. Wycliffe Amukowa, PhD
(Registrar- Research, Innovation & Linkages)
and Chairman, Editorial Board*

FROM THE DEPUTY VICE-CHANCELLOR (RESEARCH, INNOVATION AND LINKAGES)

Research and Innovation provokes imaginations that in turn enables the mind to explore the Universe with infinite possibilities. This exploration results in creation of new knowledge, discoveries and inventions that become the drivers of sustainable development. It is in this regard that the Division of Research, Innovation and Linkages endeavours the creation of an enabling environment in which staff, students and the wider community converge to unlock their possibilities for the wellbeing of everyone. We do this in line with our mission; Provide scholarly education through Training, Research and Innovation for Industrial and socio-economic transformation of our communities.

It is pleasant and elating to note the growing number of Machakos University researchers and innovators who continue to succeed against the existing financial and infrastructure constraints. The Division will remain committed to building a dynamic research culture that enriches the development and experiences for staff, students and the wider community; creates new knowledge across a broad array of disciplines, and helps improve the economic, social, and cultural vitality. This calls for continuous capacity building through training, attendance at seminars and conferences, participation in exhibitions, technology transfer and building linkages with strategic partnerships among others. This remains our focus and priority as we align and pursue our research agenda in line with the National Research Priorities in the realization of the “Big Four Agenda.”



***Prof. Peter N. Mwita, PhD,
Deputy Vice Chancellor,
Research, Innovation and Linkages***

MACHAKOS UNIVERSITY PRIDES IN HOSTING ONE OF THE TEN LUBAN WORKSHOPS IN AFRICA

On 14th December, 2019, The Kenyan Luban Workshop was opened at Machakos University in a colourful ceremony presided over the Cabinet Secretary for Information and Communications, Hon. Joe Mucheru. This followed from the partnership between Machakos University and Tianjin City Vocational College that was consummated through the signing of a memorandum of understanding on the same day.



Hon. Joe Mucheru addresses the launch forum



The Vice-chancellor, Machakos University, Prof. Lucy Irungu and Vice-chancellor, Tianjin City Vocational College, Prof. Li Yan sign the MoU

Luban workshops were named after the father of Chinese architecture, Lu Ban, an ancient Chinese woodcraft master, and has become a new model for international vocational training cooperation, from around the 4th century BC, and were designed by the Tianjin government. The Luban Workshop for Africa was announced by Chinese President Xi Jinping at the September 2018 Beijing Forum on China-Africa Cooperation (FOCAC) Summit. Jinping also promised to launch a people-to-people exchange initiative to establish an institute of African studies to enhance exchanges, and upgrade the China-Africa Joint Research and Exchange Plan.



The leaders of both institutions cut the ribbon to mark the official launch of the Luban Workshop at Machakos University

Speaking during the Launch Ceremony, Hon. Mucheru noted that the facility established with the support of Tianjin City Vocational College will help enhance cooperation in the digital space. He said that cloud computing and information security which is at the core of the Luban workshop is critical and important for us as a country.

The event was also attended by the Chairman, Machakos University Council, Prof. Gideon Hanjari, The Chairman Konza Technopolis Development Authority, Dr. Reuben Mutiso, the Authority CEO, Eng. John Tanui, Zhao Xiyuan, minister-counselor of the Chinese embassy in Kenya and the Vice-Chancellor, Machakos University, Prof. Lucy Irungu, among a host of other guests from Kenya and China.

The Chairman, Machakos University Council, Prof. Gideon Hanjari, said that the University Council will endeavour to provide excellent infrastructure and policies conducive in establishing strategic partnerships. Through these partnerships, the University will interact with the rest of the world, thereby enriching learning, research and innovation experiences for both staff and students

Chairman of Council, Prof. Gideon Hanjari speaks at the launch ceremony





The Vice-chancellor, Prof. Lucy Irungu addresses the audience

In her address, the vice-chancellor, Machakos University Prof. Lucy Irungu, said that the opening of the Luban workshop is a historic event that cements a mutual partnership and use of resources. The Vice-chancellor noted that the two institutions, Machakos University and Tianjin City Vocational College have come together for a common goal: offer quality educational and learning experiences necessary for the 21st century and beyond. Given that ICT is now the backbone of any development agenda, the construction of Luban Workshop here at Machakos University is quite timely and there would have been no better time than now. She said that through the Luban workshop, Kenya will have a chance to experience world-class cloud computing courses that will shape both thought and practice in the world of ICT.

"The workshop will further expedite interaction through world-class video conferencing facilities as well as stimulate original research in the field of ICT and related human engagement. We have with us today, a chance to make solid contributions to the wellbeing of mankind," she observed.

Zhao Xiyuan, minister-counselor of the Chinese embassy in Kenya, said the initiative aims at providing high-end professional and technical skills training to help college students meet requirements of the emerging global market, as demonstrated by the successful stories in Asia, Europe and Africa. "It is the fruit of the partnership between Tianjin City Vocational College and Machakos University, and with close collaboration with Huawei," Zhao said.



Zhao Xiyuan, Minister-counsellor Chinese Embassy in Kenya, addresses the audience

LUBAN WORKSHOP IN PICTURES



The Vice-chancellor, Machakos University, Prof. Lucy Irungu receives the Luban Workshop key



Prof. Li Yan, Vice-chancellor, Tianjin City Vocational College makes her speech



Konza Technopolis Development Authority Chairman, Dr. Reuben Mutiso makes his address



Delegates follow proceedings at the launch ceremony



Vice-chancellor, Prof. Lucy Irungu opens the Luban Workshop



Participants inside the workshop



Chairman, Machakos University Council, Prof. Gideon Hanjari leads members of the University Management Board and guests in following presentations from Tianjin City through a giant video conferencing facility in the Luban Workshop

ESTABLISHING PARTNERSHIP WITH TIANJIN CITY VOCATIONAL COLLEGE

The construction of Kenya Luban Workshop at Machakos University was preceded by the signing of Letter of Intent between the two institutions in October, 2019, which was presided over by Prof. Joyce Agalo, on behalf of the Vice-Chancellor, Prof. Lucy Irungu. China offered to cooperate with the African government to open ten Luban workshops in the continent at the Forum on China-Africa Cooperation Beijing Summit in 2018. Prof. Agalo observed that looking at the success stories in Thailand, Djibouti and Egypt, the workshop has the potential to boost Kenya's overall development and competitiveness through the training of the country's youth to better serve development projects across the country, as well as provide well-trained talents to the country.



Prof. Joyce Agalo and Prof. Li Yan sign Letter of Intent



Prof. Agalo and Prof. Li Yan display the plaques that signify mutual partnership

Later after the Signing Ceremony, the delegation paid a courtesy call to the Chief Administrative Secretary and Principal Secretary, State Department of University Education and research; Ministry of Education, Prof. Collette Suda, at the Ministry of Education Headquarters in Nairobi. Prof. Suda commented the two institutions for initiatives towards establishing a partnership



The Principal Secretary Ministry of Education and Research, Prof. Collette Suda exchanges pleasantries with Prof. Li Yan during a courtesy call

MACHAKOS UNIVERSITY STAFF ATTEND CLOUD COMPUTING TRAINING IN CHINA

The 8-day training was attended by four lecturers Dr. Muchiri Rajab, Mrs. Veronica Mutua, Ms. Nyakorema Grace and Mr. Steven Musili from the CIT Department in Machakos University, who had Certifications from Huawei programs in Cloud Computing, Artificial Intelligence and Networking- Routing and Switching. The training ran from 28th November to 7th December. The training was done using the Engineering Practice Innovation Project (EPIP) methodology, which is a new way of talent cultivation, which is guided by practical projects, oriented by practical application and aimed at the cultivation of innovation ability.

The training was based on Huawei's "cloud network integration" data center overall solution. The latest application technologies, such as the technical architecture, and focused on the following aspects through the training:

- (1) Cloud computing technology;
- (2) Internet of Things technology (IoT).

- IoT wireless and wired Communications Technologies
- IoT Short Range and Long Range wireless Communications Technologies
- Conducting experiments using bluetooth technology

The first part of the training began with an Introduction to Cloud Computing which is the practice of using a network of remote servers hosted on the Internet to store, manage, and process data, rather than a local server or a personal computer. This was followed by practical sessions in Cloud Computing Configurations.

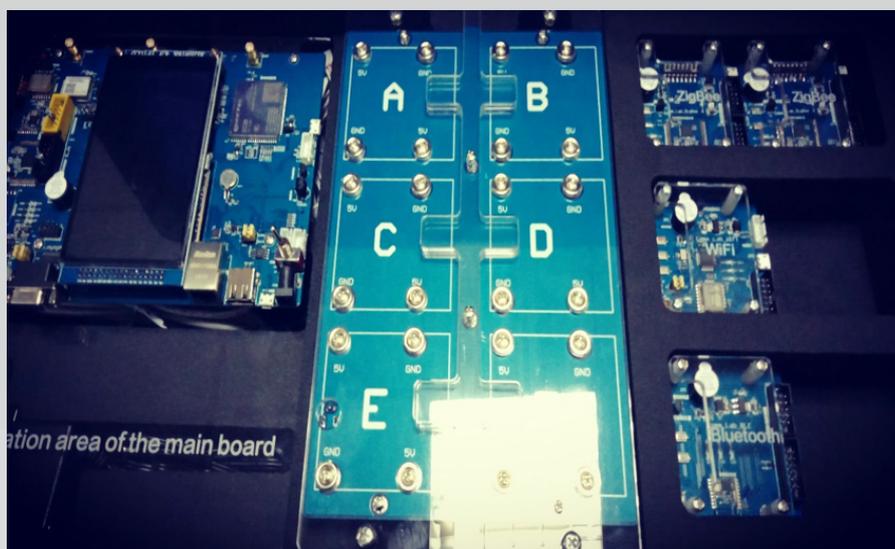


Cloud Computing Training Session

The second part of the training was an introduction to Internet of Things (IOT) which is a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers (UIDs) and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction, this was followed by Practical sessions of Operation of IoT Configurations with hands on practicals with the IoT Experiment Box that enables practical experiments to be carried out that demonstrates connectivity of devices to share information and data.



IoT Training Session



Inside the Experiment Box

Training concluded with a visit to Tianjin Public Vocational Training Center where Chinese students from various colleges in China are given an opportunity to have a hands on experience after being trained using the EPIP methodology and what is expected of them in the industries.

SCHOLARS ATTEND MATHEMATICS WORKSHOP



Dr. Mark Kimathi

Machakos University Mathematics scholars led by Dr. Mark Kimathi, who is also the Dean, School of Pure and Applied Sciences attended a one week “Mathematical Modeling for Infectious Diseases: Theory and Practice” at Jomo Kenyatta University of Agriculture and Technology (Sino – Africa Joint Research Centre) from 2nd – 6th December, 2019. The workshop was facilitated by Samuel Mwalili, associate professor of Biostatistics at Jomo Kenyatta University of Agriculture and Technology, and the South promoter of VLIROUS Biostatistical capacity building.

The five-day course focused on the first principal development of the mathematical models from basics to medium level and its application to real-life situations. It also encompassed “hands-on” practical section in different programming languages such as R and RStudio, EPP spectrum, MATLAB and EMOD which came to closure by doing modeling project by all the participants. Others who attended the Workshop were Dr. Charles Muli and Dr. Euna Nyarige, both from the School of Pure and Applied Sciences.

Machakos University Receives a Grant to Purchase Analytical Equipment



Prof. Zachary Getenga

Following a successful proposal written by Prof. Zachary Getenga, The Alexander Von Humboldt Foundation of Germany has granted Machakos University Kshs.4, 423,000 towards the purchase of Ultra High Performance Liquid Chromatography (Ultra HPLC). This is the latest equipment in the market with high sensitivity and is used across many disciplines in Sciences, Agriculture, and Environment among others. This equipment will enhance the quality of research output in the University. Prof. Getenga is a professor of Environmental and Analytical Chemistry in the School of Pure and Applied Sciences.

Unearthing the Relevance of Science, Technology, Engineering and Mathematics Programmes in Universities on Meeting Industry Needs in Kenya

Dr. David Mulwa (Principal Investigator), is leading other researchers in the University into unearthing the relevance of science, technology, engineering and mathematics (STEM) programmes in universities on meeting industry needs in Kenya. This follows his successful application for internally funded research grants. He purpose to assess the effectiveness of current STEM programmes offered in Kenyan public Universities, to establish industry skill set requirements for effective STEM job performance and to assess the relevance of University STEM programmes on meeting industry needs in Kenya. Several activities including literature review, piloting of research tools and data analysis have already been carried out. The process of report writing is on-going. Already some pattern of research findings are forming which will be disseminated in several academic fora in the near future. Others in the team are:



Dr. David Mulwa

Prof. Josphat Kiweu, Dr. Pamela Muriungi, Dr. Jacinta Kinyili, Dr. Richard Kimiti, and Prof. James Muola.

MksU Researchers seek Comparative Data and Implication of the Current Processes used by Insurance Companies and Application of Block Chain Technology on Business Performance in Kenya



Prof. Dauglas Shitanda

Led by Prof. Dauglas Shitanda, Machakos University researchers are out in the field to compare the Current processes used by insurance companies and influence of block chain technology on business performance in Kenya. Their specific objectives are to establish the processes used by insurance companies in Kenya; establish the challenges of the current processes used by insurance companies on business performance; establish the level of awareness in insurance companies on block chain technology on their business performance and further stablish the benefits of block chain technology on business performance of insurance companies. The team is through with preparation of data collection tool, inception meeting and training were conducted, Pilot testing, analysis

of pilot data and adjustment of tools, Primary Data collection, Data analysis and they are now writing the final report. Other team members are Mr. Watson Kanuku and Dr. Margaret Nganu.

MKSU SCHOLAR ATTENDS DESIGN + CHANGE IN AFRIKA: AN INTEGRATION OF SUSTAINABLE DEVELOPMENT GOALS (SDGS) IN A DESIGN CURRICULUM WORLD EVENT



Prof. Mugendi M'Rithaa

Prof. Mugendi M'Rithaa, in his capacity as Convenor of the Senate and Parliamentarian, presided over the World Design Organization's World Design Assembly held in the City of Hyderabad (India) from 11-12th October 2019. He also presented a paper at the World Design Organization Research and Education Forum held on 10th October 2019 in the said city. Design education is evolving in Afrika and sustainability is becoming an integral part of the change process in Higher Education Institutions (HEIs). Designing as experimentation has shifted expert designers' attention from designing things to designing for specific purposes, hence the need to design for sustainment. The United Nations (UN) Sustainable Development Goals (SDGs) (UN Report, 2018) provides a framework for which designers can explore and design for sustainability within Afrikan contexts. In this paper, we present sustainability cases and activities conducted in HEIs in Afrika. In this context, the SDGs were introduced as part of an advertising course for learners to deepen their knowledge on design for sustainability. Learners' activities on sustainability indicated that they have deepened their knowledge on SDGs and sustainable futures. Also, positive mindsets on sustainability have been acquired by participants, which would inform future design processes and respond to sustainable advertising practices.

MACHAKOS UNIVERSITY WINS ERASMUS+ MOBILITY INTERNATIONAL FOR STAFF AND STUDENTS

Machakos University together with University of West Attica (Greece) won International Credit Mobility through Erasmus+ International Credit Mobility 2019-2022. The Credit Mobility seeks to enhance capacity building by enabling academic staff to develop new skills, learn and share new ideals and discover best practices through a mobility facility.

The team leader, Dr. Cornelius Okello attended a planning meeting from 20th-24th January, 2020 in Athens, Greece. It was agreed during the meeting that the areas of collaboration between Machakos University and University of West Attica are: Engineering, Business and Economics, Health Sciences and Renewable Energy. Staff and students from the above disciplines are eligible to participate in the Mobility. However for students, undergraduate students should be in their final year and must be working on a research project. Post graduate students could be in any programme.



Dr. Cornelius Okello

MACHAKOS UNIVERSITY STUDENT INNOVATORS EXCITE HULTPRIZE JUDGES

Machakos University students who participated in the Hult Prize Competitions 2020 excited the judges with their life touching innovations that could transform communities and industry when fully harnessed. During the event, the top three innovations were selected to participate in the global competition in Tokyo Japan. This year, the Hult Prize is challenging students to create bold business that have a positive net impact on the environment with every sale completed.

Thousands of students from more than 150 countries have applied, and have selected the top teams to compete in the region competitions. These will take place on March and April 2020, across 22 global cities.

INNOVATORS	PROJECT MEFAP
<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p><i>Ayieko Ronald</i></p> </div> <div style="text-align: center;">  <p><i>Ghulam Geophrey</i></p> </div> </div>	<p>The project is all about extracting heavy metals from treated sewage water or even the untreated sewage water where the process is able to give three metals; mercury, lead and silver of which the metals are used in various industries in the world hence will generate income. The project was as result of: Unemployment for many youths in the country, heavy metal disease caused i.e. cancer, low IQ, weak muscles etc. and also Environmental pollution by sewage water. We are looking forward to solve the above problems with the project we have come up with in order to extract the heavy metal from the sewage and treat the water in order to be used in drinking and irrigation by coming up with proper sewage collection centers in our country.</p>
INNOVATORS	PROJECT PAPEED
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="display: flex; justify-content: space-around; width: 100%;"> <div style="text-align: center;">  <p><i>Julius Monari</i></p> </div> <div style="text-align: center;">  <p><i>Vincent Were</i></p> </div> </div> <div style="margin-top: 20px; text-align: center;">  <p><i>Esther Njeri Wangechi</i></p> </div> </div>	<p>Papyrus reeds farming, a supply chain for sustainable development, means reinventing the fundamentals of the economy to ensure responsible production of papyrus reeds as an essential item in processing eco-friendly bags that do not pollute the environment. Additionally, the entire process aims to reduce drastically logging activities for paper pulp by establishing a lead producer of papyrus pulp to the paper industry.</p>

FROM THE UNIVERISTY LIBRARY

The University Library continues to provide quality services to all her clients. This is made possible by regular training and deskilling of library staff as well as partnering with relevant stakeholders in her effort of improving service delivery. Over the Financial Year 2019/2020 has undertaken the following activities:

KNOWLEDGE AMBASSADORS' CLUB

The knowledge ambassador's club members have been very instrumental in marketing the library services to other students which has resulted to increase in the library users.



Knowledge Ambassadors in a photo with Prof. Peter Mwita, Deputy Vice-chancellor, Research Innovation and Linkages

VISIT BY THE NATIONAL COUNCIL FOR PERSONS LIVING WITH DISABILITIES

National Council for persons with disabilities visited the library on 8th May ,2019. The visit was aimed at establishing the extent to which library meet the needs of users living with disability.They recommended that we fix the key kits for the emergency doors on the ground floor at a level they can be operated by persons living with disability.This has since been done.



Persons living with disabilities at the University Library during the visit

LIBRARY LITERACY DAY



Participants in a group photo

The library staff partnered with knowledge ambassadors club members (in reflector jackets) and held library literacy day on 9th October, 2019. The Day involved: Creating awareness of Library services and resources; Displaying information materials; Demonstrating access and retrieval of books by use of Online Public Access Catalogue (OPAC); Demonstrating access to e-books and e-journals (both On and Off Campus access) and Creating awareness on plagiarism issues. The library staff registered

and attended to the information needs of 719 clients. The programme of the day run from 8.00 am to 5.00pm. This outdoor activity was very popular with the students because they came requesting for services way past 5.00pm. It is on this basis that; the Library staff recommends three (3) days for next years' library literacy day. The day was a success and this has seen the library clients increasing



Participants being taken through learning support facilities in the Library

VISITATION BY SCHOOLS

As part of community service initiatives, the library allows visitation by schools. These visits are aimed at cultivating a reading culture among students. High school students are also offered career guidance by the office of career services. The Two (2) schools that visited the library on 9th October, 2019 graced the library literacy day event





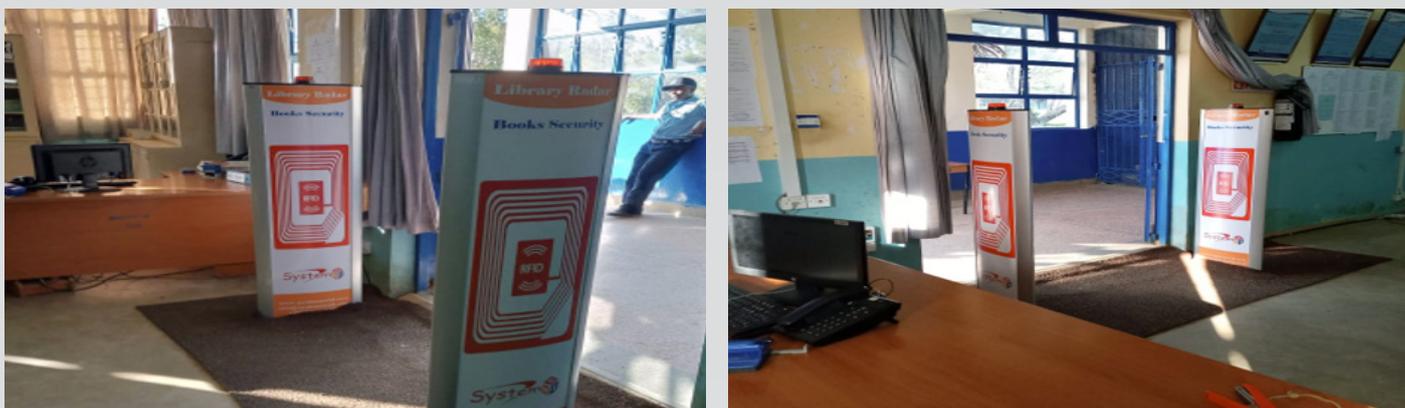
Nganwa secondary school visited the library on the Library literacy day that was held on 9th October, 2019



Imale School from Makueni County visited the library on 4th October, 2019.

HANDING OVER OF ELECTRONIC SECURITY SYSTEM

The installation of library security system commenced on 27th June, 2019 and was completed on 27th August, 2019. The committee on contract implementation for supply, delivery, installation, configuration and testing of Library security system presented its findings and recommendations to the office of the Vice-Chancellor on 6th September, 2019. The system was handed over by the supplier to the implementation committee for use by the library on 31st October, 2019.



Security system mounted at the Library main entrance

ISO TRAINING

On 15th October, 2019 PC and QMS directorate staff trained library staff on QMS and ISO 9001:2015 in preparation for external audit that was conducted on Wednesday 23rd October, 2019.



Library staff follow ISO training

TURNITIN TRAINING

MSC Agri-Business students in the company of their lecturer Dr. Muange receives a training on 15th October, 2019. The training focused on Plagiarism, Referencing and the role of University library in postgraduate research.



INCOME GENERATING NEWS

Machakos University embraces income generating activities as a strategy to raise additional funds and ensure financial sustainability, without compromising the core mandate of providing quality higher education and conducting academic research. This approach gives schools, departments, directorates and other units to use their expertise and underutilized resources to earn money for the university and staff engaged in income generation (service providers). The strategy is implemented through the Income Generating Units (IGUs) coordinated by the IGU Coordinator. Currently the University has four (4) active IGUs namely;

- i. Fashion Design and Marketing (FADMA)
- ii. Soap and Detergent production
- iii. Centre for Renewable Energy (CREN)
- iv. The Huawei Authorized Information and Network Academy (HAINA)

1. Soap and Detergent Production Unit

This unit, based at the Department of Physical Sciences, produces a high quality multipurpose detergent branded Mubble Green, for domestic use in washing of dishes, hands and general cleaning. The product comes in different fragrances, colours and packages, and its price is pocket friendly. The product is certified by the Kenya Bureau of Standards and is therefore safe for use both within and outside MksU. Mubble green has been used for cleaning activities in the University for more than one year. It has also been purchased by University staff and other customers who continue to give positive feedback about its superior performance. See pictures below.



*The Mubble Green Detergent and hand wash gel.
To place your order, Call +254 720 250 440*

2. FADMA Production Unit

This unit is located next to Cosmetology Department and the University Marketing Office. The Unit makes and markets clothing and related products such as uniforms (for students and different cadres of staff) dust coats, lab coats, overalls, personal clothes, conference bags, table cloths, curtains and sheers and their accessories, among others. Since inception, the unit has produced and supplied various items to the university, some of which are shown in the pictures below. The items are sold at affordable prices, depending on customer specifications. Orders can be made through +254 722 908 584.



2nd International conference bags.



Refurbishment of conference room 1.



Staff uniforms made by the unit.

3. Centre for Renewable Energy Technology Transfer

The Centre for Renewable Energy (CREN), offers a short course (one-week) titled “T3 Grid-Tie Solar PV”. This course is suitable for anyone interested in working with or establishing a business in solar power technologies. Fees for the course is KSh40,000, but charges for internal clients are highly subsidized. Since inception, the Unit has trained energy specialists from Kengen, County governments and Machakos University. For more details, call +254715831853.



Trainees attending the T3 Grid- Tie Solar Pv Training and learning how to install a solar PV panel.



Deputy Vice Chancellor (RIL) with the Trainers and Facilitators during the training.

4. The Huawei Authorized Information and Network Academy (HAINA)

HAINA offers the short course termed “Huawei Certified ICT Associate – Routing & Switching (HCIA-R&S). This is a 16-hour course, delivered over a period of 8 weeks. HCIA certification validates the knowledge and skills required for basic configuration and maintenance of small to medium-sized networks. The course is a highly marketable and suitable for ICT professionals and students. The course is open to MksU staff and students as well as external clients. Classes are held in the evening, which makes the course convenient to most trainees. Since its inception, the Academy has trained a number of ICT professionals.

More information can be sought through +254 725644729 and www.cit@mksu.ac.ke

For more information and enquiries, you can reach us on: igu@mksu.ac.ke; admin.igu@mksu.ac.ke

MACHAKOS UNIVERSITY COMMUNITY SERVICE DAY

With the negative impact of climate change and environmental threats caused by among other forest destruction, there is a compelling need for all Kenyans to participate in environmental restoration and reforestation. It is in response to this that Machakos University sets aside funds and a day dedicated to tree planting. This event was adopted by the University Management to be held every 26th April of every year, but due to sporadic rains, it is held as deemed convenient.

The Third Tree Planting Day was held on 19th November, 2019 was presided over by His Excellency, the Deputy Governor, Machakos County-Eng. Francis Maliti and the Vice-Chancellor, Prof. Lucy Irungu. A total of 2,000 (Two Thousand) trees were planted within the University.

Speaking at the launch, the Vice-Chancellor, Prof. Lucy Irungu acknowledged the active participation of Machakos University students and implored them to take the exercise seriously. Quoting from the late Prof. Wangari Mathai, the Vice-Chancellor said planting trees gives hope for the future and that trees planted today will in future attract rain and water that will preserve lives and give hope to thousands of our people.

His Excellency, the Deputy Governor, Machakos County-Eng. Francis Maliti applauded the University on the tree planting initiatives and said that the County will look into the possibility to allocate at an acre piece of land to start Machakos University Forest. The Forest will also have a local weather monitoring station that could be used for training purposes.



Vice-chancellor, Prof. Lucy Irungu waters her tree



The Deputy Governor, Eng. Francis Maliti speaks after planting his tree



SAMU Chairman, Shadrack Mngat is assisted to water his tree



The Deputy Governor assists students to plant trees



Students enthusiastically plant trees in the University





2019 Research Quote

*“A frog decided to reach the top of a tree.
All frogs shouted,
“It’s impossible, It’s impossible.”
Still the frog reached the top.
How...?
Because he was deaf and he thought
everyone was encouraging him to
reach the top.”*

*“BE DEAF TO NEGATIVE THOUGHTS
IF YOUR AIM IS TO REACH YOUR GOAL”*



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ISO 9001:2015 CERTIFIED