DEAN, FACULTY OF SCIENCE, ENGINEERING & TECHNOLOGY (FSET)

WELCOMING MESSAGE TO THE 2020 FIRST YEARS

1.0 A welcome Message

- On behalf of Chuka University family, I take this opportunity to welcome you, our new students, to the University and in particular to the Faculty of Science, Engineering and Technology of Chuka University.

  I congratulate all of you for your brilliance. You are all very intelligent having qualified to this very high ranking Faculty, FSET. You are actually a top cream of Kenyan intellectuals.

- The faculty provides high quality education based on modern scientific teaching and research techniques and aims to produce highly trained scientists in the various disciplines to meet the ever-growing challenges of a dynamic world in the pure sciences and to offer practical solutions to problems affecting humanity in applied sciences.

- The faculty provides you many opportunities to develop your skills, abilities, and talents as well as engage in learning through our academic and co-curricular programs. This will be the best time in your life to learn great things and ask big questions. Please take advantage of this time to benefit to the fullest.

2.0 Faculty Organization:

- The office of the Dean is located on the first floor of the Science Complex building room. It has three personnel who assists the dean in the day to day running of the faculty activities.
- The Faculty comprises of three (3) Departments with their respective Chair of Departments (CODS) namely:
  Physical Sciences - Prof. Ochieng Ombaka,
  Computer Science & ICT - Dr. David Gitonga Mwathi
  Biological Sciences - Dr. Eunice Githae

  - Visit the **Departmental links** for more details, in particular, on **course/unit allocation** for each of your enrolled programmes.

- Of the three Departments, Physical Sciences is further organized in the following **Sections,** with each Section having a Section head.
  (a) Section of Mathematics, Statistics and Actuarial Science
  (b) Section of Chemistry
  (c) Section of Physics
  (d) Section of Engineering
  (e) Section of Biomedical Sciences
  (f) Section of Biochemistry

  - For more details on sections, see the attached **Section links.**

3.0 Faculty Programmes

- Note that except for Masters and PhD Programmes, our **Admission/Registration numbers** begins with **E….**

S/ NO	CODE	PROGRAMME	Expected Number (KUCCPS Placement)
1	EB1	BSC COMPUTER SCIENCE	108
*2	EB2	BSC GENERAL	117
3	EB3	BSC APPLIED COMPUTER SCIENCE	118
4	EB4	BSC BIOCHEMISTRY	79
5	EB5	BSC BIOMEDICAL SC. & TECHNOLOGY	72
6	EB6	BSC MATHS	100
7	EB7	BSC PHYSICS	51
8	EB8	BSC CHEMISTRY	77
9	EB9	BSC BIOLOGY	46
10	EB11	BSC MICROBIOLOGY AND BIOTECHNOLOGY	48
11	EB13	BSC ACTUARIAL SCIENCE	50
12	EB14	BSC INDUSTRIAL CHEMISTRY	80
16	EB24	BSC ELECTRICAL AND ELECTRONICS ENGINEERING	42
19	EC1	CERT IN COMP SC	-
20	ED1	DIP IN COMP SCI	-

21	SM	MASTERS	-
22	SD	PHD	-
23	EC	SUBJECT ENHANCEMENT	-
		TOTAL	**988**

*NB:

- ❖ Students admitted under EB2 programme, might wish to transfer their programme to a more specialized programme of BSc. such as EB6 (BSc Maths), EB7 (BSc Physics), EB8 (BSc Chemistry) and EB9 (BSc Biology).

- ❖ However, students are highly advised **to check their qualifications before applying** for the interfaculty/departmental transfer as only the qualified candidates are considered.

- ❖ **For further advise on the transfer qualifications and subject combinations,** kindly liase with the Office of the Registrar Academics, Dean FSET or COD Physical Sciences office **before applying.**

- ❖ Remember in course/programme transfer, one should be guided first and foremost by the passion and then the qualification. Also student should seek information from reliable resourceful personnel.

4.0 Faculty Prospects

- ➢ The faculty is upbeat in the continued enrolment of thousands of students. We attribute this to the Faculty's great effort in developing new market-driven programmes like Actuarial Science, Electrical and Electronics Engineering and Industrial Chemistry among others, which have attracted the highest recorded number of students. More other prestigious programmes such as BSc. Analytical Chemistry, BSc. Financial Mathematics, Bachelors in Business Information & Technology, BSc. Medical Laboratory Technology, BSc. Aeronautical Engineering, BSc Architectural Engineering, BSc. Civil Engineering among others are underway.
- ➢ Staffing level in the faculty has immensely improved with a very high cadre staff in all disciplines including upto full professorship. This will go a long way in improving service delivery, and student to staff ratio.
- ➢ The faculty produces outstanding scholars, researchers and specialists, who contribute innovatively to the development and well-being of humanity.
- ➢ The evolution of knowledge and skills through technology is more rapid than ever before. To embrace this, the University has purchased **state of the Art science equipment** that has enabled staff and students to carry out innovative research. (**See the FSET EQUIPMENT INVENTORY Link**).

- The setting up and completion of the **Ksh.3 billion Science Park** will be a phenomenal achievement for our scientists who will have extensive resources for research. It will house several labs, workshops, and incubation centers for enhancing further research in different areas to come up with new market products. It will be a game changer in arena of science in Kenya and in the world.

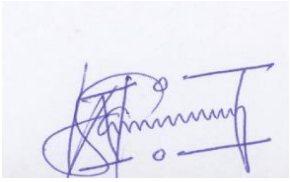
5.0 Conclusion:

- **Make wise choices:** The University experience will impact heavily on your life because you will enjoy the fruits of your good judgments if you made good choices.
  You will also find yourself regretting dearly because of the consequences of your bad choices or mistakes.

  Please take care so that you won't have to regret!
  Your success journey in this field calls for a disciplined, hardworking and creative/innovative mind set. This is a mind with an ambition for mastery of major skills in life (including talent and intellectual growth). This is the mind that seeks to become an employer rather than an employee.

- On our part as the Faculty of Science, Engineering & Technology, we will strive to provide you with a variety of possibilities for growth and learning. The Faculty has indeed to put in place the necessary facilities in order to facilitate your personal development and comfort and will continue improving on this.

Thank you.
God bless you. God bless Chuka University.



Prof. Musundi Sammy W., PhD.
DEAN, FSET.

SECTIONS OF THE DEPARTMENT OF PHYSICAL SCIENCES
BRIEF OVERVIEWS

SECTION OF MATHEMATICS, STATISTICS AND ACTUARIAL SCIENCE

Section Head: Dr. Gladys Gakenia Njoroge

SECTION HEAD'S MESSAGE

The section of Mathematics, Statistics and Actuarial Science is one of the robust areas of specialization that every aspiring higher learning Institution should lay a lot of emphasis to. This is because of the much versatile interdisciplinary applications of the three areas and beyond.

In an ever-changing, increasingly complex world, it's more important than ever that our student are prepared to bring knowledge and skills to solve problems, make sense of information, and know how to gather and evaluate evidence to make decisions. These are the kinds of skills that students develop in these great disciplines.

Research has shown that if we want a nation where our future leaders, neighbors, and workers have the ability to understand and solve some of the complex challenges of today and tomorrow, and to meet the demands of the dynamic and evolving workforce, building students' skills, content knowledge, and fluency in these fields is essential.

With advancement in technology, the nature of research and business is becoming increasingly complex and quantitative. An investment in these fields is essential for taking full advantage of these developments in technology.

Fields of Specialization and career opportunities:

Essentially, the three areas draws their foundation from core discipline of Mathematics. The following comprises main areas of specialization and career prospects that are on offer by the Section:

1) **Pure Mathematics**

Pure mathematics is the study of the basic concepts and structures that underline mathematics. Its purpose is to search for a deeper understanding and an expanded knowledge of mathematics itself. It studies entirely abstract concepts. However, these concepts are models of real world phenomena and their results turn out to be practical,

though this process may take years. Pure Mathematics is concerned with increasing knowledge of the subject rather than using knowledge in practical ways. It prepares student for more advanced mathematical studies. A pure mathematician makes dreams even beyond the imagination of human beings, and it is the scientific and technologist to apply them.

Career opportunities

Studying Pure mathematics enables you to master a broad range of mathematical techniques that will lead to mastery of the fundamental processes of mathematical science and the capacity for innovation application areas. Many other areas also use mathematics which is learnt in Pure Mathematics study plan: for example, did you know that mathematicians are employed to develop image reconstruction technology? This technology is used in medical imaging and mineral exploration to allow us to explore the structure of hidden subjects. But to mention a few, with pure mathematics you can become;

- Research Scientist
- Tutor
- Lecturer

2) Applied mathematics

Applied mathematics is the application of mathematical methods by different fields such as science, engineering, business, computer science, and industry. A career in applied mathematics is more than crunching numbers. It is being able to use mathematics to solve real-life problems and make an impact in the world. Many different types of organizations hire mathematicians and computational scientists.

Career opportunities

- Applied Mathematics Researcher
- Engineer
- Modeler
- Modeling Engineer
- Lecturer

Here are some examples of organizations that hire Applied Mathematicians

- Academic institutions and research institutions
- Aerospace and transportation equipment manufacturers
- Pharmaceutical manufacturers
- Energy systems firms
- Engineering research organizations
- Insurance companies

3) Statistics

Statistics is a broad mathematical discipline which studies ways to collect, analyze, interpret, organize, summarize, and draw conclusions from data. It is applicable to a

wide variety of academic fields from the physical and social sciences to the humanities, as well as to business, government and industry.

Career opportunities

- Operations research analyst
- Actuary
- Budget analyst
- Control statistician
- Financial analyst
- Marketing consultant
- Foreign exchange trader
- Cryptographer
- Lecturer

4) Actuarial Science

Actuarial Science programme uses Mathematics, Statistics, Economics and financial knowledge to model and manage future uncertainty in the financial and insurance industries. Particularly, insurance firms, pension and benefits and other similar organizations require services of actuaries in pricing products and minimize future risks. However, these firms often have to contract actuaries from the UK or elsewhere due to the shortage of qualified actuaries locally. It is thus follows that the future of a specialist in this area is very promising.

Careers in Finance, Economics, Banking Securities and Investments

The Profession has recently actively sought new opportunities whilst at the same time consolidating its presence in traditional employment areas. The Profession seeks to expand the recognition of and employment opportunities for actuaries.

Ageing populations, damages, finance, genetics, healthcare, personal finance planning and risk management are all new areas in which the effective contribution of actuaries has been recognized.

Life insurance companies provide life insurance, pensions and other financial services. Actuaries are involved at all stages in the product development and in the pricing, risk assessment and marketing of the products.

General insurance companies employ actuaries to assist with their financial management, in particular in connection with premium rating and reserving. Actuarial and statistical techniques are used extensively in the analysis of often substantial amounts of available data. This analysis is then used to rate the risks and to ensure that claims reserves are adequate to meet the eventual settlement of insurance claims.

The World Trade Centre attacks, Caribbean windstorms and industrial diseases like asbestosis are all examples of insurance liabilities where actuaries have been integrally involved in estimating ultimate costs into an uncertain future.

Actuaries have been involved in the field of *investment management* for decades. They are involved in buying and selling assets, investment analysis and portfolio management. In addition, actuarial techniques are ideal for use in measuring investment performance.

Although generally regarded as the province of the *investment banker*, actuaries can add value in this area. An actuary's basic skills in forecasting and assessing risks are ideal for estimating whether a capital project (e.g. for a new hospital or a transport infrastructure project) is financially viable. Employers might include *government departments, management consultancies, or property companies* specialising in this area.

The leading retail *banks* are increasingly employing actuaries as they recognise that the longer term approaches advocated by actuaries can add value to their businesses. As insurance companies increasingly hedge their risks, we have seen a corresponding increase in the demand for actuaries from the *investment banks* that provide the hedge products.

Actuaries have built models to evaluate the potential insured losses arising from natural catastrophes such as hurricanes and earthquakes.

Around the world an increasing number of actuaries are working in new areas, such as climate change, genetics, energy supply and major infrastructure projects. This trend is expected to continue.

Within the financial sector, the involvement of actuaries in both retail and investment banking is likely to continue to grow. It is clear that the modern actuarial skill set equips actuaries to play a key role in risk management throughout the financial sector and beyond, particularly in areas where a long-term perspective is important.

Internationally, actuarial professional bodies are cooperating to promote the involvement of actuaries in risk management, which is now a high profile activity in all areas of business. This will be an important initiative in the years ahead.

PHYSICS SECTION

Section Head: Dr. Zipporah W. Muthui (PhD)

SECTION HEAD'S MESSAGE

The Physics section falls under the Department of Physical Sciences, in the Faculty of Science Engineering and Technology, of Chuka University. Robust programs, that prepare an all rounded graduate coupled with interaction with state of the art laboratory equipment, ensure that our graduates are well prepared for the job market and industry.

PROGRAMMES

1. **BACHELOR OF SCIENCE IN PHYSICS**
   This program prepares a graduate who will contribute to technological advancement in applications such as computer architecture, wireless telephony, optic fibre communication, material science, advances in medical equipment, imaging techniques and weather forecasting amongst many others in Kenya and all over the world. There is a limited number of well-trained personnel in physics and related fields, who are needed in the aforementioned applications. Graduates of this program are therefore on high demand by the job market in related

2. **BACHELOR OF ENGINEERING PHYSICS**
   This program fills the gap between pure and applied science. Engineering physicists perform research and development in high-technology industries in the fields of telecommunications, microelectronics and microdevices, lasers and novel materials. Additionally through the broad and thorough training provided in fundamentals and applied technology, graduates can explore other fields, such as biotechnology, nanotechnology, communications technology, computer design, and software development, Graduates can also enter into advanced degree programs to conduct research, and instruct the next generation of physicists.

3. **BACHELOR OF SCIENCE IN APPLIED GEOPHYSICS**
   This program aims to train human resource that meets the development needs of the country and international labour market, sustain production of quality and relevant research; disseminate knowledge, skills, values and competencies for

the advancement of humanity. The program is designed to combat shortage of professionals trained in Applied Geophysics in this country, Africa region and the world at large. The graduates are equipped with techniques of analysis, knowledge, skills, attitudes, and experiences that prepare them to face challenges in the fields of Geophysics.

4. MASTER OF SCIENCE IN PHYSICS

The goal of this program is to provide learners with a wide range of knowledge and skills in physics for the purpose of research, training, innovation, job creation and commercialization of technology.

Areas of specialization

- *Condensed matter physics*
- *Material science*
- *Electronics*
- *Geophysics*
- *Nuclear physics*
- *Theoretical physics*
- *Computational physics*

5. MASTER OF SCIENCE IN MEDICAL PHYSICS

Medical technology for both diagnostic and therapeutic procedures is one of the corner stones of contemporary medicine. As a result, there is a high demand for suitably educated and trained specialists in medical physics worldwide. The program offers an exceptionally well-balanced education, combining classroom, laboratory, and clinical training. Medical Physicists will contribute to maintaining and improving the quality, safety and cost-effectiveness of healthcare services through patient-oriented activities requiring expert action, involvement or advice regarding the specification, selection, acceptance testing, commissioning, quality assurance/control and optimised clinical use of medical devices and regarding patient risks and protection from associated physical agents (e.g., x-rays, electromagnetic fields, laser light, radionuclides) including the prevention of unintended or accidental exposures. All activities will be based on current best evidence or own scientific research when the available evidence is not sufficient.

6. DOCTOR OF PHILOSOPHY IN PHYSICS

The rapidly changing highly technological world in which we live in today requires a work force that is equipped to modify and utilise the technology in order to attain the desired level of development anticipated by most world economies. Indeed many development blueprints have been anchored on technological advancement with industrialization being one of the major milestones. A PhD in Physics is geared towards developing a highly knowledgeable and skilled

professional in generating innovations, application of principles and new technologies in industry especially in the chosen area of specialization. The research project may be laboratory-based, field or modelling studies at the micro and macroscopic scales in theoretical physics, electronics, solid state physics, material science, nuclear physics, or geophysics.

Areas of specialization

- *Condensed matter physics*
- *Material science*
- *Electronics*
- *Geophysics*
- *Nuclear physics*
- *Theoretical physics*
- *Computational physics*

7. DOCTOR OF PHILOSOPHY IN MEDICAL PHYSICS

A PhD in medical Physics is geared towards developing a highly knowledgeable and skilled professional in generating innovations, application of principles and new technologies in the medical sector. The PhD research project may be; laboratory-based, field or modeling studies.

Upcoming

BACHELOR OF TECHNOLOGY IN MINERAL EXPLORATION AND MINING TECHNOLOGY

The graduate from this program will gain skills that will enable them to design, develop, reclaim, and manage mines that are profitable, safe, and environmentally acceptable. Successful completion of the curriculum qualifies the student for a professional career in development and valuation of mineral properties, design and management of mine systems, or research and consulting. The program is designed to combat shortage of professionals trained in mining field in this country, Africa region and the world at large. The curriculum is also designed to provide interdisciplinary approaches for training mining scientists who can work competitively in all fields and areas in the sector

BACHELOR OF SCIENCE IN ASTRONOMY AND ASTROPHYICS

Graduates from this programme will have skills to work in areas such as Satellite Space Stations (e.g. San Marco in Malindi), Astronomical Observatories and Remote Sensing.

CHEMISTRY SECTION

Section Head: Dr. Joel Mwangi Gichumbi

Vision

To be a leading department for the provision of world class quality training and cutting edge research to accelerate industrialization.

Mission

The mission of the department of physical sciences is to generate, transmit and preserve quality knowledge by promoting independent and interactive learning, a scientific inquiry culture and striving for adverse national and global development in pure and applied research in sciences and technology.

QUALITY OBJECTIVES

1. To help students acquire academic excellence in sciences in order to instill transformative thinking and confidence in facing modern challenges scientifically.
2. To promote a culture of scientific inquiry and global development in pure and applied research in sciences and technology.
3. To create HIV/AIDS awareness among science students and address HIV/AIDS pandemic as a national disaster.

OVERVIEW OF THE CHEMISTRY SECTION

The chemistry section is a part of the Department of Physical Sciences, Chuka University. The sections offers both undergraduate and postgraduate programmes as shown below:

PhD. Programmes:

‥Doctor of Philosophy in Chemistry in the areas of Organic, Analytical, Inorganic and Physical Chemistry.

MSc. Programmes:

Master of Science in Chemistry Organic, Analytical, Inorganic and Physical Chemistry.

Bachelors Programmes:

✓‥Bachelor of Science in Chemistry
✓‥Bachelor of Science in Environmental Chemistry
✓‥Bachelor of Science in Industrial Chemistry

Opportunities for BSC. Chemistry

- Chemical technician
- Toxicologist
- Chemistry teacher
- Water Chemist
- Analytical Chemist
- Synthetic Chemist
- Quality Control Chemist
- Organic Chemist
- Forensic Scientist
- Hazard waste chemist
- Material scientists
- Pharmacologist
- Research and Development
- Technical sales and marketing
- Academic chemistry lecturer
- Research scientist
- Environmental consultant
- Agriculture Chemist
- Food and flavor chemist
- Cosmetic chemist
- Nanotechnologist

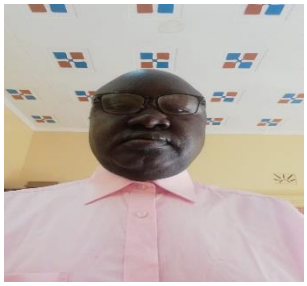
Opportunities for BSC. Industrial and Environmental Chemistry

- Product manager
- Material scientist
- Research and design chemist
- Analytical sales
- Development chemist
- Laboratory technologist
- Technical sales
- Production/radio chemist
- Quality control manager
- Chemistry teacher
- Environmental

The section through the guidance and supervision of its academic staff is engaged in various research activities. The section has a state of the art laboratory with the most advanced scientific equipment's like: ICP/MS/MS; AAS; UV/Vis spectrometer; HPLC; Elemental analyzer'; GC with Head space, FTIR and others. These equipment have placed the section at the cutting edge of research.

BIOCHEMISTRY SECTION

Section Head: DR SILAS KIRUKI



Biochemistry is an interdisciplinary scientific field that seeks to describe the living world in terms of its cellular and molecular structures and transformations thereof. Biochemistry has become the foundation for understanding all biological processes. It deals with animals, plants and microbes both in health and disease states and their interactions at molecular level. In particular, it has provided explanations for the cause of many diseases in humans, animals, and plants. It can frequently suggests ways by which such diseases may be, diagnosed, treated or cured.

Recent advances in biochemistry has led to development of new aspects of the subject such as Molecular Biology, Bioinformatics, Biotechnology and Medical Biochemistry. Biochemistry primarily, focuses on what is happening inside our cells, studying structure and functions of major components of life like water, carbohydrates, proteins, lipids and nucleic acids. Knowledge and methods developed by biochemists are applied in all fields of medicine, agriculture and many chemical and health-related industries. Biochemists work in many places including; hospitals, agriculture, universities, research institutes, industrial laboratories, cosmetics, forensic science, drug discovery and vaccine development. It's very exciting to be part of this fascinating and dynamic area of study.

SECTION OF BIOMEDICAL SCIENCES

Section Head: Tabitha Kavuli Itotia

INTRODUCTION TO BIOMEDICAL SCIENCES

Biomedical science (i.e. medical biology) is a branch of medical science that applies biological and physiological principles to clinical practice. The branch especially applies to biology and physiology. Biomedicine also can relate to many other categories in health and biological related fields. It has been the dominant health system for more

than a century. It includes many biomedical disciplines and areas of specialty that typically contain the "bio-" prefix such as molecular biology, biochemistry, biotechnology, cell biology, embryology, nanobiotechnology, biological engineering, laboratory medical biology, cytogenetics, genetics, gene therapy, bioinformatics, biostatistics, systems biology, neuroscience, microbiology, virology, immunology, parasitology, physiology, pathology, anatomy, toxicology, and many others that generally concern life sciences as applied to medicine.

Medical biology is the cornerstone of modern health care and laboratory diagnostics. It concerns a wide range of scientific and technological approaches: from in vitro diagnostics to in vitro fertilisation, from the molecular mechanisms of cystic fibrosis to the population dynamics of the HIV virus, from the understanding of molecular interactions to the study of carcinogenesis, from a single-nucleotide polymorphism (SNP) to gene therapy.

Medical biology is based on molecular biology and combines all issues of developing molecular medicine into large-scale structural and functional relationships of the human genome, transcriptome, proteome, physiome and metabolome with the particular point of view of devising new technologies for prediction, diagnosis and therapy.

Biomedicine involves the study of (patho-) physiological processes with methods from biology and physiology. Approaches range from understanding molecular interactions to the study of the consequences at the in vivo level. These processes are studied with the particular point of view of devising new strategies for diagnosis and therapy.

Depending on the severity of the disease, biomedicine pinpoints a problem within a patient and fixes the problem through medical intervention. Medicine focuses on curing diseases rather than improving one's health.

In social sciences biomedicine is described somewhat differently. Through an anthropological lens biomedicine extends beyond the realm of biology and scientific facts; it is a socio-cultural system which collectively represents reality. While biomedicine is traditionally thought to have no bias due to the evidence-based practices, Gaines & Davis-Floyd (2004) highlight that biomedicine itself has a cultural basis and this is because biomedicine reflects the norms and values of its creators.

Biomedical Scientist Duties

A biomedical scientist is a scientist trained in biology, particularly in the context of medicine. These scientists work to gain knowledge on the main principles of how the human body works and to find new ways to cure or treat disease by developing advanced diagnostic tools or new therapeutic strategies. The research of biomedical scientists is referred to as biomedical research.

The primary responsibility of a biomedical scientist is to develop new treatments, vaccines and drugs for human illnesses and diseases. The biomedical research needed to create new forms of treatment is generally conducted at a hospital, university or government laboratory. In addition to laboratory-based research projects, a biomedical scientist may also be involved in clinical drug trials that require them to monitor patients'

reactions to different drug dosages, as well as make observations and conclusions about the results and the efficacy of certain drugs. In some instances, they may also perform invasive procedures on patients, such as drawing blood or excising tissue samples.

The specific activities of the biomedical scientist can differ in various parts of the world and vary with the level of education. Generally speaking, biomedical scientists conduct research in a laboratory setting, using living organisms as models to conduct experiments. These can include cultured human or animal cells grown outside of the whole organism, small animals such as flies, worms, fish, mice, and rats, or, rarely, larger animals and primates. Biomedical scientists may also work directly with human tissue specimens to perform experiments as well as participate in clinical research.

CAREER OPPORTUNITIES

- Medical research institutes (KEMRI, WALTER REEDS, CDC, KALRO, TEA RESEACH FOUNDATION etc)
- Pharmaceutical Industries
- Medical Research Labs
- Laboratory Technology Jobs
- Blood transfusion Centers
- Clinical Scientists
- Forensic Science Labs
- Government Chemists etc

SECTION OF ENGINEERING

Section Head: Eng. Erick Kithinji Kirunguru

PROGRAMMES ON OFFER

1. BACHELOR OF SCIENCE IN ELECTRICAL AND ELECTRONICS ENGINEERING

Introduction

Bachelor of Science in Electrical & Electronics Engineering is the study of the electricity, electrical circuits, electrical machines, electronics and their applications in real life. The programme is designed to meet and solve the challenges and demands facing not only Kenya's labor market, but also meets international standards, with focus shifting to

enhancement of innovative and entrepreneurial skills that will result in a graduate capable of becoming an employer as opposed to having a white color jobs as the only option. This programme is intended to provide a sound training leading to a B.Sc. degree with Electrical & Electronics Engineering as the major subjects, and service courses required from other disciplines as minor subjects. This will produce holistic graduates suited to realize Vision 2030 objectives.

Goals of the Programme

The objective of this programme is to offer education and training in the field of electrical and electronics engineering and to equip the candidate with the skills and expertise that will allow him/her to eventually practice as an engineer. The programme intends to provide and equip students with knowledge of how the industry works, as well as giving them the engineering skills and technological knowledge needed to design, assess and improve electrical and electronic systems. It is also designed to provide the candidate with social science and management skills to enable them function well in today's multifaceted world.

Other goals of the Electrical and Electronics engineering curriculum is to:

- Develop the student's ability to engage in analytical and critical thought and expression.
- Develop a creative and versatile person to function as a productive member of profession and society.
- Prepare graduates who identify and develop solutions to solve societal problems in electrical and electronics.
- Provide trouble shooting and maintenance skills of electrical circuits, networks and equipment.
- Provide the basics for students interested in pursuing post-graduate studies in Electrical & Electronics engineering.

Job Prospects

Electrical and electronics engineering is a very wide field that rewards its student abundantly. As an engineer, the market is not limited to only electrical sectors but ranges from banking, research, industries, military, marine and marketing. Therefore, students should prepare to work in any of the above sectors that reward engineers very well.

Upcoming Degree Programmes

- BSc. Mechanical Engineering
- BSc. Aeronautical Engineering

Upcoming Diploma Programmes

- Diploma in Electrical & Electronics Engineering
- Diploma in Mechanical Engineering
- Diploma in Civil Engineering
- Diploma in Built Engineering
- Diploma in Architectural Engineering