



UNIVERSITY OF NAIROBI

FACULTY OF ENGINEERING



2022
Information Brochure

In a World Class University Committed to Scholarly Excellence;
The Faculty of Engineering aims to Develop Knowledge and Manpower Towards
Kenya's Industrialization.

ISO 9001:2015 CERTIFIED

Introduction

The Faculty of Engineering is located on the main campus, along Harry Thuku Road, directly opposite the main administration building of the University. Nearby landmarks include the Central Police Station, the Norfolk Hotel, and the Kenya National Theatre.

The Faculty has five Departments namely:

1. Department of Civil and Construction Engineering
2. Department of Electrical and Information Engineering
3. Department of Environmental and Biosystems Engineering
4. Department of Geospatial and Space Technology
5. Department of Mechanical and Manufacturing Engineering

The Faculty is the oldest in the University, having started way back in April 1956 as the then Royal Technical College, which evolved into the University of Nairobi in 1970. To date approximately 8,000 graduates have been awarded the BSc. Engineering degree as well as numerous Master of Science and PhD degrees. Faculty Management includes; Dean of Faculty, Chairmen of Departments and Faculty Registrar.

Vision

To be a leading centre for the development of knowledge in the Engineering discipline and to inspire through our activities and relationships, in order to raise the standard of life of the people of Kenya and Africa as a whole.

Mission

To advance the knowledge and practice of the Engineering discipline and to foster the intellectual and economic vitality of the Kenyan people through teaching, research and outreach.

Core Values

- Pursuit of excellence.
- Free and open exchange of ideas.
- Professionalism.
- Team-work.
- Honesty and integrity.
- Devotion to service.
- Promotion of environmental conservation and sustainability.
- Mentorship.

Academic Programmes

All the five Departments offer a five-year undergraduate study program leading to a Bachelor of Science degree in the respective fields of study. They also offer Master of Science degrees that run for two years, as well as PhD programmes.

The Faculty has been running a self-sponsored programme since 1998 which is concurrent with the government sponsored programme. The academic year runs from September to April with a 2 months attachment period running between May and June. The graduation ceremony takes place every September and December.

Admission Requirements into Undergraduate Program

The following will be eligible to apply for a course in any of the five Departments:

(a) KSCE Minimum mean Grade of C+

Cluster Subjects
Physics - C+
Chemistry - C+
Mathematics - C+
Biology/Geo/any Group IV Subjects - C+

NB: Cut-off grades higher than C+ may be required due to limitations of number of slots.

K.C.S.E. Subject Grouping

Groups	Abbr.	Subject	Subject Selection	No
Group I	ENG KIS MAT	English Kiswahili Mathematics	Compulsory Compulsory	(2)
Group II	BIO PHY CHEM	Biology Physics Chemistry	At Least Two	(2)
Group III	HAG GEG CRE IRE HRE	History and Government Geography Christian Religious Education Islamic Religious Education Hindu Religious Education	Group III (Geography) or Group IV, or Group V (Business Studies) Depending on the Department	(1)
Group IV	HSC ARD AGR AVT CMP	Home Science Art And Design Agriculture Aviation Technology Computer Studies		
Group V	FRE GER ARB MUS BST	French German Arabic Music Business Studies		
Total				(5)

b) **Advanced Level Certificate Holders:** A minimum of 2 principal passes in Mathematics and Physics and a subsidiary level pass in Chemistry.

c) **KNEC Higher National Diploma (HND) or Equivalent in the following areas;**

- Agricultural/Biosystems Engineering
- Civil engineering
- Electrical engineering
- Mechanical engineering
- Geospatial Engineering
- Any other approved subject area.

d) **Ordinary Diploma with credit or equivalent in the following areas;**

- Agricultural/Biosystems Engineering
- Civil engineering
- Electrical engineering
- Mechanical engineering
- Geospatial Engineering
- Any other approved subject area.

e) **Diploma in Mathematics and Physics** with credit from Science/Technical Teacher Training Colleges

f) **BSc/B.Ed (Science)** degrees or any other relevant degrees.

Fee structure for self-sponsored students

LEVEL OF STUDY	SEMESTER 1	SEMESTER 2	YEARLY TOTAL
Level One	233,750	207,250	441,000
Level Two	228,750	207,250	436,000
Level Three	229,250	207,750	437,000
Level Four	229,750	208,250	438,000
Level Five	228,750	207,250	436,000
Grand Total			2,188,000

All the Degree Programmes offered are professional degrees recognized by the Engineers Board of Kenya (EBK) and Institute of Engineers of Kenya (IEK). Graduates are employed in; line Ministries, Parastatals, International Organizations, Private Bodies and in Consulting firms.

Department of Civil and Construction Engineering

The Civil Engineering profession deals with the design and construction of infrastructure, utilities and buildings of present and the future. BSc. in Civil Engineering is a stimulating degree programme that mainly deals with infrastructure development.

The major areas of Civil Engineering covered include:

- Structural Engineering
- Transportation Engineering
- Geo-technical Engineering
- Hydraulics
- Water and Environmental Engineering
- Hydrology and Water Resources Engineering.
- Civil Engineering Construction and Management

Degree Programmes Offered

- BSc. in Civil engineering
- MSc. in Civil engineering
- PhD in Civil engineering

Career Opportunities

- Civil Engineers can specialize in any of the diverse thematic areas of their professions as listed above.
- **Public Sector:** All Departments and public corporations dealing with Civil Engineering infrastructure and buildings e.g. Ministry of Roads, Works, Water, and Local Government.
- **Private Sector:** Engineering consultants, Construction Companies, Management Companies, Banks among others.



Department of Electrical and Information Engineering

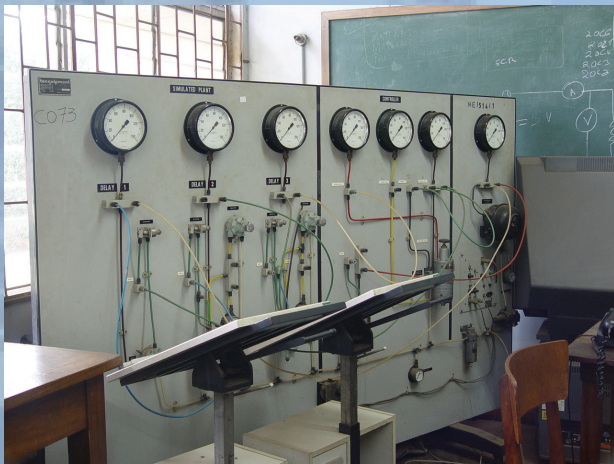
Electrical and Electronic Engineering is a professional Engineering discipline that deals with the study and application of electricity, electronics and electromagnetism. The field first became an identifiable occupation in the late nineteenth century with the commercialization of the electric telegraph and electrical power supply. The BSc. in Electrical and Electronic Engineering encompasses the following core areas of Electrical and Electronic Engineering:

- Power
- Control systems
- Optoelectronics
- Electronics
- Digital electronics
- Signal processing
- Artificial intelligence
- Telecommunications
- Analogue electronics computer science.



Degree Programmes Offered

- BSc. in Electrical and Electronic Engineering
- MSc. in Electrical and Electronic Engineering
- MSc. in Nuclear Science and Technology
- PhD in Electrical and Electronic Engineering
- PhD in Nuclear Science and Technology



Career Opportunities

Numerous opportunities exist in;

- Electrical Power Generation
- Electrical Power Distribution
- Electrical Power Systems Control
- Telecommunications Systems Management
- Computer Software Development and Engineering
- Consumer Electronics
- Telecommunications System Engineering and Development, inclusive of both fixed and mobile [wireless] telecommunications
- Internet Physical Infrastructure Engineering
- Microwaves and Antenna Engineering
- Microelectronics Fabrication
- Control Systems and Robotics.

Department of Mechanical and Manufacturing Engineering

Mechanical Engineering is the application of principles of science and mathematics to solve problems through the design and manufacturing of objects and mechanical systems. The major thematic areas covered by the program include:

- Engineering Mechanics – static and dynamic machine systems
- Fluid Mechanics – Fluid flow systems and aerodynamics
- Materials Science and Engineering
- Materials Processing and Production Processes
- Thermodynamics – Energy and Energy conversion including Heat Transfer.



The BSc degree in Petroleum Engineering offered is primarily concerned with the upstream operations of economic extraction of petroleum products (oil and gas). Producing oil and gas is accomplished through the design, drilling and operation of wells and well systems, and the integrated management of the underground reservoirs in which the resources are found. There is however a minor emphasis of the program on the transportation of crude and refined petroleum products as well as downstream activities such as storage and distribution of petroleum products.



Degree Programmes Offered:

- BSc. in Mechanical Engineering
- BSc. in Petroleum Engineering
- MSc. in Energy Management
- MSc. in Mechanical Engineering
- PhD in Mechanical Engineering

Career Opportunities for Mechanical Engineering

- Manufacturing Industries
- Transport Industry
- Government Departments and Corporations
- Service Industries
- Infrastructure Industry

Career Opportunities for Petroleum Engineering

- Government Departments and Corporations
- Oil and Gas Companies
- Geothermal Companies
- Service Industries

Department of Environmental and Biosystems Engineering

Environmental and Biosystems Engineering programme prepares its graduates for careers requiring application of physical, biological, and Engineering sciences to problems that involve environment and living systems. The scope of Environmental and Biosystems Engineering is broader and encompasses agriculture, the environment, food, forestry, aqua-culture and bio-based production and processing systems in industries and rural development.



The BSc. in Environmental and Biosystems Engineering encompasses the following core areas of Environmental and Biosystems Engineering:

- Irrigation and Water Resources Engineering
- Power and Machinery Engineering
- Environmental Engineering
- Process and Food Engineering
- Structures Engineering
- Mechanization

Degree Programmes Offered

- BSc. in Biosystems Engineering
- MSc. in Environmental and Biosystems Engineering
- PhD in Environmental and Biosystems Engineering



Career Opportunities

Numerous opportunities exist in;

- Irrigation and Water Resources
- Mechanization and Energy
- Processing and Value Addition
- Environmental Services.

Department of Geospatial and Space Technology

Geospatial Engineering is a professional discipline concerned with the measurement, analysis and graphic representation of dimensional Geospatial relationships, as well as with design, construction, maintenance, and the use of Geospatial databases.

BSc. in Geospatial Engineering encompasses the following thematic areas of Geospatial Engineering:

- Geodesy and Geodynamics
- Positioning and Navigation
- Geo informatics and Visualization
- Remote Sensing
- Land and Infrastructure management
- Topometry and Measurement Systems
- Geodynamics

Degree Programmes Offered:

- BSc. in Geospatial Engineering
- MSc. in Geospatial Engineering
- MSc. Geographical Information Systems
- PhD in Geospatial Engineering
- PhD in Geographical Information Systems



Career Opportunities

- Cadastral surveying and digital Cadastral
- Engineering surveying
- Hydrographic surveying
- Photogrammetric mapping
- Defense mapping
- Asset management and utilization
- Environmental management
- Educational institutions
- Cartography
- GIS and GPS applications
- Land planning
- Business mapping
- Planning and urban development
- Remote sensing
- Spatial data management



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