

### Structure of the Programmes:

- ✓ **Mode of Study:** Full-time at JKUAT, main Campus, Juja and each has an Internal and external attachments of 16 weeks each.
- ✓ **Regulations:** All the College and University regulations including examination regulations for the degree programmes shall apply.
- ✓ **Intakes:** September of every year.
- ✓ **Tuition fees:** The estimate for the tuition plus examination fee is KShs. 125,525/=; per semester for Kenyan citizens and 20% more on tuition for non-citizens. One academic year comprises 2 semesters.
- ✓ **How to apply:** You will be able to obtain application forms from the office of the Principal, COETEC, JKUAT, upon payment of a non-refundable fee of KShs. 1,500/= at our finance office. You can also apply online via [www.jkuat.ac.ke](http://www.jkuat.ac.ke) where you will be required to pay via **MPESA, pay bill no. 951200.**
- ✓ **Project:** In the final year of study, every student must undertake a suitable engineering project under the supervision of a member of the academic staff.

### Applicants Eligibility (Engineering & Science based programs):

- **Kenya Certificate of Secondary Education (KCSE)** with at least a mean grade of C+ (plus); and the following minimum grades in the individual cluster subjects:
  - **Mathematics C+ (plus),**
  - **Physics C+ (plus),**
  - **Chemistry C+ (plus),**
  - English/Kiswahili C+ (plus), and
  - C+ (plus) in any of the subjects in Group II, III, IV or V; (*Note: for BSc in GEGIS & GIS, Geography is required with C+ (plus).*)
- **Kenya Advanced Certificate of Education (KACE) or the A-level** with at least 2 principal passes in **Mathematics** and **Physics**; with a total score of **at least nine (9) points**, and at least a credit pass in Chemistry at the KCE or its equivalent; OR
- **Ordinary Diploma** from the KNEC. In addition, the diploma holder must have had satisfactory mean/subject grades at O-level or equivalent;
- Any other external examination body recognized by the University Senate as being equivalent.

### Applicants Eligibility (Architecture and Built-environment based programs School of Architecture and Building Sciences (SABS)):

- KCSE Mean grade of B- (minus) and C+ (plus) grade in **cluster-group of 4 subjects** which include:
  - **Mathematics,**
  - **Physics, and**
  - **any Group III** (History / Geography or CRE/IRE/HRE) or
  - **2nd Group II** (Biology / Chemistry); OR
  - **2nd Group III** OR
  - **Group IV** (Home Science / Art and Design or Agriculture / Aviation Technology / Computer Studies); OR
  - **Group V** (French, German, Arabic, Music, Business Studies);

### ENGINEERING & SCIENCE BASED PROGRAMS:

#### 1. School of Civil, Environmental and Geospatial Engineering (SCEGE)

- **Department of Geomatic Engineering and Geospatial Information Systems(GEGIS)**
  - ✓ B.Sc. Geomatic Engineering and Geospatial Information Systems (5 Years)
  - ✓ BSc. Geomatic Information Science (GIS) - 4 years
- **Department of Civil, Construction and Environmental Engineering (CCEE)**
  - ✓ B.Sc. Civil Engineering (5 Years)

#### 2. School of Electrical, Electronic and Information Engineering (SEIEE)

- **Department of Electrical and Electronic Engineering (EEE)**
  - ✓ B.Sc. Electronic and Computer Engineering (5 Years)
  - ✓ B.Sc. Electrical and Electronic Engineering (5 Years)
- **Department of Telecommunication and Information Engineering**
  - ✓ B.Sc. Telecommunication & Information Engineering (5 Years)

#### 3. School of Mechanical, Manufacturing and Materials Engineering (SoMMME)

- **Department of Mechanical Engineering**
  - ✓ B.Sc. in Mechanical Engineering (5 Years)
- **Department of Mechatronic Engineering**
  - ✓ B.Sc. in Mechatronic Engineering (5 Years)
- **Department of Marine Engineering and Maritime Operations**
  - ✓ B.Sc. in Marine Engineering (5 Years)
- **Department of Mining, Materials and Petroleum Engineering**
  - ✓ B.Sc. in Mining and Mineral Processing Engineering (5 Years)

#### 4. School of Biosystems and Environmental Engineering (SoBEE)

- **Department of Soil, Water & Environmental Engineering**
  - ✓ B.Sc. in Water and Environmental Management (4 years)
  - ✓ B.Sc. in Energy and Environmental Technology (4 years)
  - ✓ B.Sc. in Aquaculture Technology (4 years)
  - ✓ B.Sc. in Water and Environmental Engineering (5 years)
  - ✓ B.Sc. in Soil, Water and Environmental Engineering (5 years)
- **Department of Agricultural and Biosystems Engineering**
  - ✓ B.Sc. in Agricultural and Biosystems Engineering (5 Years)

### BUILT-ENVIRONMENT PROGRAMS

#### 5. School of Architecture and Building Sciences (SABS)

- **Department of Architecture**
  - ✓ Bachelor of Architectural Studies/Bachelor of Architecture (4 - 6 years)
- **Department of Landscape Architecture**
  - ✓ Bachelors degree in Landscape Architecture (4 years)
- **Department of Construction Management**
  - ✓ Bachelor of Construction Management (4 years)
  - ✓ Bachelor of Quantity Surveying(4 years)
  - ✓ Bachelor of Real estate (4 years)

### BRIEF DESCRIPTION OF THE PROGRAMS OFFERED:

#### ENGINEERING & SCIENCE BASED PROGRAMS

##### 1. **Civil Engineering**

A Civil Engineer with technical training in the fields of structural, geotechnical, high transportation, environmental and water engineering. Internal and external practical attachments complement the theoretical learning and industry.

##### 2. **Geomatic Engineering and Geospatial Information Systems (GEGIS)**

A Geomatic Engineer uses modern engineering tools to practice the science of measurement; to acquire, assess, process, analyze and present land and geo-referenced information (in the form of maps, plans, etc.); to use that information for the purpose of planning and implementing the efficient administration of the land, the sea and structures thereon, and to investigate the advancement of such practices.

##### 3. **Geospatial Information Science (GIS)-4 year science program**

A GIS expert brings together the disciplines of computing, surveying, mapping, cartography and visualization, environmental science and statistics for the collection, analysis and modelling of spatially based or associated information. This is used in environmental and natural resources management, exploration and mining, land ownership, urban and regional planning, facilities and utilities management, asset management, health planning, demographic marketing and uses modern techniques of geodesy, digital mapping, Remote Sensing, cartography, Geo-information and Satellite Positioning.

##### 4. **Electrical and Electronic Engineering**

Produces Electrical engineers who specializes either in light current or heavy current options. The students are expected to learn a systematic and analytic approach to electrical and electronic engineering to enable them to carry out design and research work.

##### 5. **Electronic and Computer Engineering**

Electronic and Computer engineers need to be familiar with computer architectures and hardware, and must possess good analytical skills and a broad background in Electrical Engineering. The degree aims to give the graduates a combination of expertise from computer science, computer engineering, software engineering, electronic systems and electronic components. They will also be skilled in software engineering.

##### 6. **Telecommunication and Information Engineering**

A Telecommunication Engineer will provide access to many of the new technologies of mobile, radio, rural and remote communication facilities for voice, data, facsimile, email, internet and video/data. It is the first course of its kind available in East Africa for undergraduate.

##### 7. **Mechanical Engineering**

A Mechanical Engineer trained in application of mechanical engineering concepts in design and manufacturing. They specialize in either automotive engineering or production/manufacturing engineering.

##### 8. **Mechatronic Engineering**

A Mechatronics Engineer gives a thorough understanding of modern engineering and manufacturing combined with specialist skills in electronics and computer based technology. This involves aspects of Electrical, Electronic and Mechanical Engineering together with an

understanding of manufacturing methods. The course aims to equip engineers to lead or work in multi-disciplinary design teams on products that involve both a mechanical and electronic dimension.

#### 9. Marine Engineering

A Marine Engineer develops and maintains ship propulsion units, ship structures and all support machinery, as well as initiates manufacturing projects or improve existing maritime operations. The curriculum is designed to meet the standards of the International Maritime Organization (IMO). The graduates of this program will work in the high seas as well inland. Students also undergo cadet training, to acquire the necessary life skills, as well as some IMO-prescribed mandatory courses.

#### 10. Mining and Mineral Processing Engineering

Mining engineer specializes in both mining and mineral processing mainly in the process of taking mineral resources from the earth and separating valuable elements of material from unwanted waste material from the ore body, in the most economical way. One can specialize in either mining or mineral processing.

#### 11. Agricultural and Biosystems Engineering

Produces specialized Engineers combining biological and technical skills to address issues in agro-industrial development and the consequent environmental problems. Graduates find jobs in both private and public sectors in various engineering fields and in particular bio-processing systems design, design and production of bio-processing machines and structures, waste management, irrigation and drainage engineering, soil and water conservation and environmental management.

#### 12. Water and Environmental Management

Science based program producing graduates with the necessary knowledge and skills for sustainable land development and natural resources utilization. The graduate will find jobs in both government and public sectors as Water and Environmental managers involved in sustainable exploitation of natural resources for Agricultural and Industrial Development.

#### 13. Energy & Environmental Technology

Science based program producing market driven and competitive graduates who are specialists in energy and environmental technology. The programme allows graduates to specialize in Energy Management, and Energy Technology. Graduates in this programme are equipped with necessary knowledge and skills for sustainable exploitation and utilization of natural resources, especially harnessing and management of energy systems.

#### 14. Aquaculture Technology

Science based program that aims to produce scientists and technologists for sustainable utilization and development of aquaculture resources. The students are expected to apply the knowledge of mathematics, sciences, engineering technology and management principles in solving problems in aquaculture production systems to boost food security and nutrition. Potential employers include those involved in regulation, research and design, development and production of aquaculture products and production systems.

#### 15. Water and Environmental Engineering

Engineering program that aim to produce scientists with necessary skills for sustainable water resources development and management. Students are expected to apply basic sciences to develop innovative and sustainable solutions to water resources challenges such as water scarcity and pollution. Graduates in this program find jobs sectors dealing with design, development and maintenance of water projects (supply, sewerage, treatment, irrigation) or those dealing with manufacture, sale of water products and equipment.

#### 16. Soil, Water and Environmental Engineering

Engineering program that aim to produce scientists with necessary skills for sustainable water, land and related natural resources development, management and protection. Recognizing that water and land resources are inextricably entwined the programme aims for an integrated approach management of the two resources and other relates resources such as vegetation. Students are expected to apply basic sciences to develop sustainable solutions to water and environmental challenges facing the world today such as water scarcity and climate change.

### BUILT-ENVIRONMENT BASED PROGRAMS

#### 17. Architectural studies / Architecture

The Two-Tier degree programme comprising 4 years Bachelor of Architectural Studies and subsequent 2 years Bachelor of Architecture. The program concerns both planning and designs of the built and natural environment. Emphasis is on art approach to design. Upon completion of the program holders can work as Architects.

#### 18. Landscape Architecture

The programme is based on the scientific understanding of natural processes, informed by history, culture, and social dynamics. It is an environmental based profession. Design projects emphasize the understanding of land, its processes, and its integrity, in order to satisfy user needs. The programme exposes students to major design areas such as Hard and Soft landscape design, Landscape Engineering, Planning and Designing of recreation facilities and finally, Environmental Planning, Design and Management.

#### 19. Construction Management / Quantity Survey / Real Estate

The programmes address:

- (a) The importance attached to existing building materials and the need for newer, appropriate and better affordable materials;
- (b) How different methods of construction management, construction processes and related technologies can be utilized to improve efficiency and reduce cost in the building industry;
- (c) Management of costs of construction projects, and relevant building Laws.



## JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY COLLEGE OF ENGINEERING AND TECHNOLOGY (COETEC) Self-Sponsored (SSP) Undergraduate Degree Programmes

**Vision:** A University of global excellence in Training, Research, Innovation and Entrepreneurship for development.

**Background:** JKUAT is one of the leading and prestigious Public Universities in Kenya with a strong focus on technology. College of Engineering and Technology (CoETEC) is the pioneer college in the University offering internationally recognized courses in Engineering and Built Environment. Our graduate engineers are heading multinationals in the fields of roads construction, buildings, water resources, electricity generation and transmission, survey, agricultural farm machinery production, automation, engines and automotive sector and telecommunication engineering.

**Location:** We are located in Juja town along the Nairobi - Thika Superhighway, approx. 33 kilometers from Nairobi city and approx. 5 kilometers from Thika Town.

**Learning Environment:** The beautiful JKUAT grounds are expansive with ample open space filled with a wide variety of trees and ornamental plants. It is a quiet place which has an environment conducive to academic pursuits.



KARIBU USOME UHANDISI NASI



### College of Engineering and Technology (CoETEC):

**Organogram:** COETEC is headed by the Principal and comprises 5 Schools headed by Deans and 13 departments headed by Chairpersons. We offer 13 engineering-based programs, 3 science-based programs and 5 built-environment programmes. Additionally, we have a well-equipped and modern Engineering Workshops which also hosts Innovation and Prototyping Integrated Centre (iPIC) and supports research, innovation, fabrication, prototyping, internal attachment and demonstration among others.

### Enquiries / Contacts:

✦ **The Principal, College of Engineering and Technology, JKUAT.**  
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