



## POSTGRADUATE PROGRAMMES



### Introduction

The Department of Horticulture is one of the departments in the **Faculty of Agriculture** at JKUAT. The department provides theoretical and practical training to students who go out to develop the Horticultural and Landscape industry. It offers the students up to-date knowledge and develops skills in agricultural sciences especially horticulture. The knowledge and skills are practically applicable and contributes to the development and improvement of horticultural production. As a result, graduates of the department are able to successfully compete in the labour market of Kenya and beyond.

The Department offers undergraduate (Bachelors) and postgraduate programmes (Masters - M.Sc. and Doctor of philosophy –PhD). The details of the postgraduate programmes are as follows:

### 1. MASTERS PROGRAMMES

#### 1.1. M.Sc. Horticulture

This is a complete and well integrated programme in advanced horticultural production and research training. The graduate shall be able to apply, advanced knowledge and skills of horticultural science and technology to the various horticultural production systems. In addition, he/she shall be able to design and execute research work aimed at innovation of new technologies that would further improve productivity of various species and quality of horticultural crops and produce. The candidate shall specialize in one of these three fields: (a) **Pomology** - fruit science, (b) **Floriculture** - cut flower and ornamental sciences, and (c) **Olericulture** - Vegetable Science.

#### Entry Requirements

A minimum of a 2<sup>nd</sup> Class honours (Upper Division) degree in Horticulture **OR** related fields such as Agriculture or Botany from JKUAT, **OR** an equivalent qualification from an institution recognized by the JKUAT Senate. Those with Second Class Honours (Lower Division) may be admitted if they have relevant experience of at least two years.



### 1.2. M.Sc. Landscape Planning and Conservation

This is an interdisciplinary course that focuses at applying scientific skills for practical solutions aimed at developing sustainable environments for human comfort and nature conservation. The objective of the course is to develop specialized skills and to build human capacity in environmental aesthetics, landscape planning and conservation for human well-being and sustainable development. Graduates from this program may apply skills gained, in the following areas among others depending on their area of specialization: research, training and policy formulation; urban green space planning; ecological and habitat survey, design, planning and management; landscape evaluation and assessment; landscape rehabilitation, reclamation and pollution management; eco-tourism planning and management; golf course and institutional grounds management; park and recreational space management; environmental assessment; environmental impact assessment and audit projects.

#### Entry Requirements

A minimum of 2<sup>nd</sup> Class Honours (Upper Division) degree in the areas of Horticulture, Ornamental Science and Landscaping, Environmental Horticulture and Landscaping Technology, Environmental Engineering, Landscape Architecture or any other related life, earth and social science from an institution recognized by JKUAT senate **OR** an equivalent qualification recognized by the JKUAT Senate. Those with Second Class Honours (Lower Division) may be admitted if they have relevant experience of at least two years.

### 1.3. M.Sc Plant Breeding

The course targets graduates who are interested in specializing in areas related to plant genetic improvement, genetic resource management or seed production. It offers knowledge on the genetic basis of plant breeding and provides skills in conventional breeding practices, application of biotechnology in plant improvement and variety selection technologies. The graduate will be exposed to institutions involved in plant improvement and therefore gain knowledge of challenges and opportunities in plant improvement. The graduate shall have the capacity to develop plant improvement plans for plants of economic importance and shall provide services to seed companies, research and training institutions and offer consultancy services to plant variety development firms.

#### Entry Requirements

A minimum of 2<sup>nd</sup> Class Honours (Upper Division) degree in Horticulture, Agriculture, Plant Biotechnology or Botany from

JKUAT; **OR** an equivalent degree from an institution recognized by the JKUAT Senate; **OR** Those with Second Class Honours (Lower Division) may be admitted if they have relevant experience of at least two years.

#### 1.4. M.Sc Plant Health Science and Management

The objective of this course is to produce human resource with knowledge and skills of the science and practical understanding of plant health for the purpose of managing biotic and abiotic stresses that limit the genetic potential of plants with the aim of promoting food security and stimulate economic growth. The course is designed to offer students a complete and well integrated knowledge on stresses that limit crop productivity. The graduates will be able to conduct, analyze, and interpret research in general plant health management and crop protection in academia and as private practitioners and consultants, technical representatives with agri-based firms, researchers and extension. In addition, he/she should be able to design and execute research work aimed at innovation in plant health science and management using technologies that would further improve productivity of various species and quality of crops.

#### Entry Requirements

A minimum of 2<sup>nd</sup> Class Honours (Upper Division) degree in Horticulture or related fields such as Agriculture or Botany from JKUAT, **OR** an equivalent degree from a University recognized by the JKUAT Senate, **OR** Those with Second Class Honours (Lower Division) may be admitted if they have relevant experience of at least two years.

#### 1.5. M.Sc Research Methods

This is a regional programme offered at JKUAT and several other institutions under Regional Universities Forum for Capacity Building in Agriculture (RUFORUM). Training in traditional areas of statistics and biometry have tended to emphasize mathematical statistics with little emphasis on practical skills on experimental design and emerging development issues which require complementary competencies. Furthermore, they are theoretical and leave a big gap between the advisor and advisee, resulting in several complaints by researchers about inadequacies in advice by statisticians. The goal of this course is to build, sustain and strengthen regional capacity for teaching, learning and practice of impact oriented research for development and scientific progress. The graduates of this programme serve to provide the inter-phase between statisticians and research practitioners.

The learning process integrates different research fields such as social sciences, agricultural experimentation, clinical and public health studies. Apart from imparting skills in basic areas of biometry, there is a strong emphasis in application of appropriate research methodology in innovation systems research and development impact assessment, etc. Teaching approaches are also student-friendly to foster life-long learning

#### Entry Requirements

At least a 2<sup>nd</sup> Class honours (Upper Division) degree from Jomo Kenyatta University of Agriculture and Technology, **OR** a degree from a University recognized by the JKUAT Senate **OR** A holder of a Second Class Honours (Lower Division) degree provided that the candidate has at least 2 years of relevant experience.

### 2. DOCTORATE PROGRAMMES

High quality Doctorate programmes are offered in the Department. Doctorate programme are offered through research and thesis only but candidates deemed weak in certain areas may be required to take certain predetermined course units. The entry requirements are indicated below for each programme.

#### 2.1. Ph.D Horticulture

MSc. degree in any of the following disciplines: Horticulture, Ornamental and landscaping Sciences, Agronomy, Plant breeding, Plant pathology, Soil Science or other related sciences from institutions recognized by JKUAT Senate.

#### 2.2. Ph.D Landscape Planning and Conservation

MSc. degree in the areas of Horticulture, Landscape Planning and Conservation, Environmental Engineering, Landscape Architecture or any other related life and social science from an institution recognized by JKUAT senate, **OR** have any other equivalent qualification recognized by the JKUAT Senate.

#### 2.3. Ph.D Plant Breeding

MSc. degree in Plant breeding, Horticulture or other related sciences from institutions recognized by JKUAT senate.

#### 2.4. Ph.D Plant Health Science and Management

MSc. degree in any of the following disciplines: Horticulture, Agronomy, Plant breeding, Plant pathology, crop protection or other related sciences from institutions recognized by JKUAT Senate.

### Our Vision

A world class department of excellence for development

### Our Mission

Our Mission is "to produce leaders in training, research and innovation in the fields of Horticulture, landscape sciences, and land resources planning and management, to suit the needs of a dynamic world"

### Our Objective

The objectives are to train highly qualified manpower in Horticulture, landscape sciences, and land resources planning and management; conduct research, participate in the dissemination and preservation of scientific knowledge, develop and promote quality and market driven academic programmes, to expand, strengthen and sustain the University income base, and to play an active role in national horticulture policy formulation, research and analysis.



### Contact Address

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#### Website

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