

## **INTRODUCTION**

Data science is an interdisciplinary field of study that combines domain expertise, programming skills/algorithms, and knowledge of mathematics and statistics to extract meaningful insights from structured and unstructured data. Data is the foundation of innovation hence a good data scientist is one who knows how to extract the data, who he needs to connect with, hire, or the technologies he needs to deploy to get the job done. Moreover, a data scientist is one who can link business objectives with data marts, and who can simply connect the dots from business gains to human behaviors and from data generation to money spent. A data scientist's duties include developing strategies for analyzing, exploring and visualizing data, building models with data using programming languages and deploying these models into applications.

## **COURSE OBJECTIVES**

This course is of importance as it provides knowledge on extraction of valuable information for use in strategic decision making, product development, trend analysis and forecasting.

## **Target groups:**

- Statisticians
- IT Professionals
- ICT Professionals
- data managers
- Software Developers and Architects,
- Business Intelligence Professionals
- Project Managers,
- Aspiring Data Scientists,
- University students looking to begin a career in Big Data Analytics

## **COURSE STRUCTURE AND REGULATIONS**

### **Duration:**

The course takes a total of four (4) weeks.

### **Course outline:**

There are twelve required modules:

#### **Module one:**

Introduction to Data Science.

#### **Module Two:**

Data Science Tools.

#### **Module Three:**

Data Science Methodology.

#### **Module Four:**

Predictive Modelling Fundamentals.

#### **Module Five:**

Python for Data Science.

#### **Module Six:**

Data Analysis with Python.

#### **Module Seven:**

Visualization with Python.

#### **Module Eight:**

R for Data Science.

#### **Module Nine:**

Data Analysis with R.

## **Module Ten:**

Data Visualization with R.

## **Module Eleven:**

SQL for Data Science.

## **Module Twelve:**

Interfaces.

## **Mode of Study:**

This is a part time program at JKUAT main campus.

## **Regulations:**

All JKUAT University Regulations shall apply.

## **Evaluation:**

Evaluation will be based on:

- Individual performance and participation throughout the course.
- Assessment for each assignment.
- An oral presentation of results in the course.
- A project within the four (4) weeks.

## **CERTIFICATION:**

On successful completion of the short course, the participant will receive a certificate of attendance on Introduction to Data Science from JKUAT.

## **REQUIREMENTS**

A student to be admitted must satisfy the following requirements;

1. Attendance in all parts of the course is required.
2. Partake an assignment after every module.
3. Students will be required to complete case study exercises in individual/small groups throughout the course.

## **STAFF AND FACILITIES**

The course is taught and examined by the staff of JKUAT together with the Senate approved specialist lecturers in the relevant subject areas. There are sufficient computer resources to support the programme.

## **HOW TO APPLY**

Advertisement of course is through online platforms and the press. The application forms are then obtainable from JKUAT upon payment of a non-refundable fee of Kshs. 200.00 for Kenyan Citizens and Kshs. 260.00 for Non-Citizens.

## **TUITION FEES**

For Kenyan participants, tuition fees is Kshs. 10,000 and Kshs. 12,000 for international participants. Payable to the following bank account:

## **BANK DETAILS:**

**BANK NAME:** KCB BANK LTD  
**BRANCH:** JKUAT BRANCH  
**ACCOUNT NAME:** JKUAT IT CENTRE  
**ACC. NO:** 1102698210

## **ACCOMMODATION**

Accommodation may not be available and students are expected to make their own arrangements. The office of the Dean of Students may recommend suitable hostels for accommodation.

For more information contact,  
The Dean,  
School of Mathematics and Physical Sciences,  
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Or

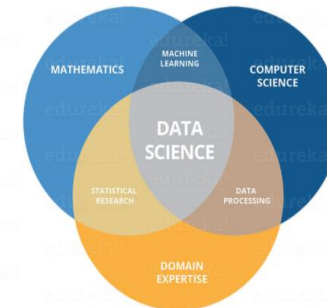
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JOMO KENYATTA UNIVERSITY OF  
AGRICULTURE AND TECHNOLOGY  
(JKUAT)

**DEPARTMENT OF STATISTICS AND  
ACTUARIAL SCIENCES**

**Data Science –  
Introduction to Data Science using Python  
and R**



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