



HOW TO APPLY

The course is advertised through the press. The application forms are then obtainable from JKUAT, upon payment of a non-refundable fee of Ksh. 1,500 for Kenyan citizens and Kshs. 1,950 for Non-citizens.

TUITION FEES

For Kenyan citizens, tuition fees is Kshs 114,750.00 for the first semester of the first year, and reduces depending on the number of units offered in the other semesters. For non citizens, add an extra 20% to the amount in every semester.

ACCOMODATION

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.

ENTRY REQUIREMENTS

Must have passed KCSE at a minimum average grade of C+ and at least C+ in English. In addition, the candidate must have passed Mathematics at KCSE with a minimum grade of C+ or credit in Bridging Mathematics.

OR

1.1 Have a minimum of 2 principle passes in Science subjects, one of which should be Mathematics, in General Certificate of Education (CGE) Advanced Level/ Kenya Advanced Certificate of Education (KACE).

OR

1.2 Have a Diploma in Mathematics or Statistics and with at least a credit pass from an Institution recognized by the University Senate,

OR

1.3 Have a Diploma in Applied Sciences, in which there has been a substantial mathematical content, with at least a credit pass in relevant subjects from an Institution recognized by the University Senate.

OR

1.4 Have a Higher National Diploma in Mathematics or Statistics from an institution recognized by the University Senate,

OR

1.5 Have any other qualifications accepted by the University senateas equivalent to 1.1 to 1.3 above. Students who hold any of the qualifications 1.2, 1.3 and 1.4 above may at the discretion of the School of Mathematical Sciences be admitted directly to the second year of the course in which case they may complete their course in a minimum of three academic years and maximum of five academic years.

Students who hold any of the qualification 1.5 above may at the discretion of the School of Mathematics and Physical Sciences be admitted directly to the third year of the course in which case they may complete their course in a minimum of two academic years and maximum of four academic years. However, applicants should note that these are MINIMUM requirements and do NOT guarantee any applicant automatic admission to the degree program.

For more information, Contact:

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JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY

Setting Trends in Higher Education, Research and Innovation

BACHELOR OF SCIENCE IN OPERATIONS RESEARCH

Department of Statistics and Actuarial Sciences



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INTRODUCTION

Operations Research is a field of science that uses mathematical and engineering methods to study optimization problems in Business, Management, Economics, Computer Science, Civil Engineering, Industrial Engineering and so on so as to make crucial, thorough, in-depth analysis to complex real life problems.



COURSE OBJECTIVE

A graduate operations research student is expected to be able to formulate mathematical, experimental and simulation models that will be able to define and evaluate real-life operational problems and alternatively recommend computational and manipulative methods that will ideally minimize losses and/or maximize profits.

EMPLOYMENT AVENUES

The students are expected to find employment in:-

- ◆ Research, Advisory and Consultancy firms.
- ◆ Logistic and Transportation Companies
- ◆ Manufacturing Companies
- ◆ Finance Sector
- ◆ Optimal Resource Allocation Companies
- ◆ Governmental and Non-governmental Institutions
- ◆ Engineering, Procurement and Health care Firms
- ◆ Military
- ◆ Education Sector

COURSE DURATION

The program takes a total of 9 semesters with 2 semesters per academic year. Each student is required to undertake a mandatory research project and practical attachment for a period of not less than 8 weeks at the end of the 8th semester. One may undertake any additional unit in their 2nd, 3rd and 4th year of study which does not count towards the classification of the degree but will appear on the transcript. One unit takes a series of 35 one lecture hours where a 3 hour practical period and a 2 hour tutorial period being equivalent to a 3 hour lecture.

COURSE OUTLINE

First Year

First Semester

University Unit
HRD 2101 Communication Skills

Faculty Unit
SMA2104 Mathematics for Science

Core Units
SMA 2100 Discrete Mathematics
STA 2101 Algebra for Statistics and Finance
STA 2102 Information Technology for Statistics
STA 2104 Calculus for Statistics I
STA 2150 Fundamentals of Operations Research
STA 2190 Fundamentals of Project Management

Second Semester

University Units
HRD2102 Development studies and Social Ethics
SZL 2111 HIV/AIDS

Core Units
STA 2100 Probability & Statistics I
STA 2105 Calculus for Statistics II
STA 2107 Database Management
STA 2152 Resource Allocation Models I
STA 2153 Financial Management and Forecasting I
STA 2154 Sustainability Management and Leadership Training

Second Year

First Semester

Core Units
STA 2200 Probability & Statistics II
STA 2202 Computer Interactive Statistics
STA 2204 Calculus for Statistics III
STA 2250 Resource Allocation Models I
STA 2251 Financial Management and Forecasting II
STA 2252 Transportation Models I
STA 2253 Graph Theory

Second Semester

Core Units
SMA 2231 Differential Equations
SMA 2201 Linear Algebra I
STA 2201 Probability & Statistics III
STA 2205 Statistical Programming I
STA 2254 Queuing Theory
STA 2255 Economic Models I
STA 2256 Transportations Models II

Third Year

First Semester

Core Units
SMA 2306 Linear Algebra II
SMA 2321 Numerical Analysis
STA 2300 Theory of Estimation
STA 2302 Probability and statistics IV
STA 2306 Real Analysis for Statistics
STA 2312 Regression Modelling I
STA 2351 Stochastic Calculus I

Second Semester

Core Units
STA 2301 Tests of Hypotheses
STA 2305 Stochastic Processes
STA 2308 Design and Analysis of Experiments I
STA 2310 Decision Theory
STA 2313 Research Methodology for Statistics
STA 2352 Dynamical Systems I
STA 2353 Queuing Theory II

Fourth Year

First Semester

University Unit
HRD 2401 Entrepreneurship Skills

Core Units
STA 2407 Multivariate Methods
STA 2408 Regression Modelling II
STA 2411 Design and Analysis of Experiments II
STA 2418 Stochastic Calculus II
STA 2450 Manpower Planning
STA 2451 Computational Mathematics
STA 2459 Project in Operations Research

Second Semester

Core Units
STA 2401 Time Series Analysis
STA 2402 Generalised Linear Models
STA 2422 Game Theory
STA 2453 Human Resource Management in Operations Research
STA 2454 Econometric Models II
STA 2494 Investment and Asset Management
STA 2459 Project in Operations Research

Third Semester

STA 2410 Industrial Attachment