

# BACHELOR OF COMMERCE

## COURSE DESCRIPTIONS

### BACHELOR OF COMMERCE

#### **BMS: 100: MANAGEMENT MATHEMATICS I**

Set Theory: types, algebraic operations and application. Equations and Inequalities: Types, formulation and solution. Functions, formulation basics, types; algebraic, logarithmic, exponential and logarithmic. Limits Theory and continuity. Differential calculus; Average and instantaneous Rates of change, rules, applications; optimization techniques, Partial derivatives; extreme of two variable function, Lagrange multipliers and constrained optimizations. Integral calculus; Antiderivative and Indefinite integrals, rules of integration, definite integrals area under and/or curves. Arithmetic and geometric series, simple and compound interest.

#### **BMS 101: INTRODUCTION TO INSURANCE**

Concepts of risk, peril, hazard and probability. Historical development in Kenya. Risk and risk management. Insurance principles and requisites. Underwriting, claims and marketing. Organization of insurance business. Economic and social significance of insurance in Kenya. The role of government in insurance industry. Types of Insurance and Benefits. Premium Rating and Reinsurance

#### **BMS 102: MANAGEMENT MATHEMATICS II**

##### **[PREREQUISITE: BMS 100]**

Matrix algebra: Basic concepts, Matrix modeling and algebraic operations. Applications: solution of linear simultaneous equations, markov analysis and Input-output analysis. Linear programming; formulation, assumptions, solution techniques: graphical and simplex. Applications. Probability Theory: Approaches, axioms, tree diagram, conditional probability and Bayes' theorem. Principles of counting: Permutations and combination. Decision Theory: Modeling, Techniques; deterministic and probabilistic, value of added and perfect information. Inventory control system; model, structure, cost, EOQ model and its application, quantity discount models.

#### **BMS 200: BUSINESS STATISTICS**

Introduction: definition and types. Overview of descriptive statistics; data collection, organization and presentation; measures of central tendency and dispersion. Probability distributions: Discrete and continuous, Binomial, Hyper geometric, Poisson, Normal and Applications. Sampling Theory. Statistical inference: Estimation theory; properties, points and interval estimates. Index Number: types, construction and application. Hypotheses testing: Z, t, F

and chi-square tests. Time series Analysis; theory, components and applications. Simple regression and correlation analysis.

### **BMS 201: COMPUTER PROGRAMMING**

Overview of Programming Languages. Algorithm development and programming; development of programming flow charts. Programming Using Various languages and their applications in business.

### **BMS 202: RISK MANAGEMENT**

Basic concepts in risk management. Risk identification and selection; Risk Analysis and Control Sources. Individual and collective risks. Evaluation and treatment of an organization's risks. Strategies of risk management. Concepts of Loss, Risk financing. Insurance. Positioning of the risk management tasks in the corporate structure. The role of captives. Challenges in risk management.

### **BMS 300: SYSTEMS ANALYSIS AND DESIGN (PRE-REQUISITE: BMS 201)**

Introduction to fundamental concepts and techniques of information systems analysis and design. Environment of Systems analysis and design. Tools and techniques used Systems analysis and design. Systems Analysis and Design Process: Parts and Task, Analysis of currents, specification of requirements, Logical Data and Process Design, Physical Design. Information Systems methodologies. Case studies approach stressed.

### **BMS 301: OPERATIONAL RESEARCH I [PREREQUISITE: BMS 102 AND BMS 200]**

Introduction to Operations Research: Meaning, historical basis, nature, and business and management decisions. Problem solving potentials. Overview of linear programming models and its applications. Duality analysis; theorem, and application. Sensitivity analysis. Distribution models: Transportation and Assignment; modeling, solution techniques, linear programming relationship, and applications. Networks; PERT and CPM methods, Time - Cost-analysis, resource allocation techniques. Non-project oriented network techniques.

### **BMS 302: APPLIED STATISTICAL METHODS [PREREQUISITE: BMS 200]**

Hypothesis testing: goodness-of-fit tests. Non-parametric tests. Analysis of Variance. Regression and correlation analysis; prediction and tests of significance. Forecasting methods/techniques and application. Factor and Discriminate Analysis; theory and application statistical analysis using appropriate statistical software.

### **BMS 303: DATABASE DESIGN AND MANAGEMENT [PREREQUISITE: BMS 300]**

Introduction to database modeling; relational theory, database design, and the management of databases. Database concept and use development. Use of database management system softwares. Database programming work. Designing, specifying and programming a working database in advanced database language with practical examples.

### **BMS 304: OPERATIONS RESEARCH II**

#### **[PREREQUISITE: BMS 301]**

Inventory control: Deterministic and Probabilistic models. Decision and Game Theory; Modeling, solution and application. Markov Chains: Markov property; transition probabilities, state classification, chain decomposition. Queuing models: characteristics, notations, types and Applications: Replacement Theory: modeling and application.

### **BSU 305: RESEARCH METHODS**

#### **[PREQUISITE: BMS 200]**

Research; definition and need. The research process. The research proposal. Literature review. Ethics in research. Research design strategies; Sampling design. Measurement. Data types, data collection tools and Techniques. Data Analysis methods: descriptive, inferential and relational statistics. Report writing techniques.

### **BMS 306: DATA COMMUNICATIONS**

Information representation, encoding, and transmission. Transmission systems and media. Communication technique. Networking; fundamentals, network architectures, wide-area and local-area networks, wireless networks, distributed systems applications, client/server and Intranet computing, Internet, network security and network management. WEB design techniques and development.

### **BMS 307: COMPUTER SIMULATIONS**

#### **(PREREQUISITE: BMS 201)**

Model building and validation. Types of simulation in discrete and continuous time. Discrete-event simulations. Performance measures. Finite Horizon and steady-state performance. Regenerative methods. Random numbers generating functions. Variance Reduction techniques. Introduction to computer languages for simulation. The Sensitivity of simulations. Validation of models output analysis.

### **BMS 308: INSURANCE LAW**

#### **[PREREQUISITE: BMS 101]**

The insurance contract. Risk and uncertainty. Principles of insurance. Insurance companies regulations in Kenya. Kenyan law relevant to insurance. Nature of civil liability and how it arises. The law of tort. Various types of liability and the defenses available. Special liabilities. Legislation. Liabilities arising out of use, control, and occupation of dangerous property including strict liabilities.

### **BMS 309: PROPERTY INSURANCE**

#### **[PREREQUISITE: BMS 101]**

Basic concepts. Insurance and Uninsurable risks. Risk improvement. Valuation and determination of risk. Types of property insurance policies. Principles of insurance. An outline of average conditions and coinsurance. Various aspects of property insurance. Property insurance underwriting and claims. The insurance market, First loss insurance, consequential loss and measure of indemnity. Pecuniary insurance underwriting and claims.

### **BMS 310: PENSIONS**

**[PREREQUISITE: BMS 200]**

History and philosophy of pension plans. Development of employee benefit schemes. Trust Deed and Rules. Description of benefits: Retirement, disability, and death, vested and non-vested, withdrawal benefits, scheme documentation. Types of pension schemes provided by employers for their employees, contributory and non-contributory, Final Salary and Money Purchase. Computation of employee benefits. Objectives and purposes of funding. Methods of funding, and contribution bases. Investment of scheme funds. Laws related to pension schemes. RBA, Gratuities. Provident Funds, National Social Security Fund (NSSF).

**BMS 311: ACTUARIAL SCIENCE I**

**[PREREQUISITES: BMS 202 AND BMS 200]**

Basic concepts. Measurement of interest, including accumulated and present value factors; annuities, yield rates; amortization schedules and sinking funds; bonds and related securities; practical applications such as real estate mortgage, short sales and modern financial instruments; discounted cash flow; capital gains tax; stochastic approaches to interest; consumer credit; capital redemption policies. Introduction to Life contingencies.

**BMS 312: RE-INSURANCE**

**[PREREQUISITE: BMS 101]**

Reasons for reinsurance. Types of reinsurance. Facultative and Treaty. Proportional and Non-proportional. Quota share, surplus, excess of loss and stop loss reinsurance. Bases for retention by companies. Rating and premium determination for various lines of insurance. Financial and economic implications of reinsurance. Other forms of reinsurance e.g. pools. Reinsurance practices. Legal aspects of reinsurance. Retrocession. Reinsurer and reinsured relationships.

**BMS 313: LIFE CONTINGENCIES**

**[PREREQUISITE: BMS 311]**

Survival function, Force of mortality. Life tables, analytical laws of mortality, Life insurance, continuous and discrete life annuities, and recursion equations. Benefit premiums, premium principles: continuous and discrete premiums. Apportionable premiums. Continuous and discrete benefit reserves. Multiple life functions and related insurance and annuity benefits. Multiple decrement models and their applications; valuation of pension plans and disability benefits with individual life insurance.

**BMS 314: DEMOGRAPHIC STATISTICS**

**[PREREQUISITES: BMS 200]**

Population statistics; births, marriages and deaths. Analysis of mortality and fertility. Multiple causes and reproduction rates. Cohort analysis and general replacement rates. Infant mortality. Life expectation and Life tables. Standardized death and mortality rates. Migration and population projections.

**BMS 315: FINANCIAL OPERATIONS OF INSURANCE MARKETS**

**[PREREQUISITE: BMS 101]**

Structure and nature of insurance markets: the buyers, the sellers and the intermediaries. Organization of insurance companies. Policyholder's premium and investment income. The changing mix of premiums receipts. Investment portfolios and strategies of insurance companies:

liquid assets corporate stock, corporate debt securities, mortgage operations, estate investment and advances to policyholders. Income and taxation of insurance companies. Government supervision and control of insurance companies.

### **BMS 317: PRINCIPLES OF SUPPLY CHAIN MANAGEMENT**

Key concepts in Supply Chain Management. Supply Chain Operations; Planning, Sourcing, Making and Delivery. Supply Chain Enablers. Supply Chain Risks. Supply Chain Optimization. Supply Chain Processes. Using Information Technology. Metrics for Measuring Supply Chain Performance. Supply Chain Coordination. Defining Supply Chain Opportunities. Creating Supply Chain for Competitive Advantage. Emerging issues in Supply Chain Management.

### **BMS 318: PRINCIPLES OF PROCUREMENT MANAGEMENT**

Introduction to Procurement. Identifying, describing and transmitting the need. Purchasing and procurement procedures. Cost management in procurement. Organization for procurement. Mechanisms for control of quantity and quality. Terms and conditions of purchase and procurement including contract negotiation. Comparative analysis of buying, hiring and leasing. Green purchasing. Ethical issues in procurement. Emerging Issues in procurement management

### **BMS 319: LOGISTICS MANAGEMENT**

Introduction to logistics management. Mix activities: warehousing, material handling, material storage, inventory management, transportation, packaging and logistics information systems. Logistics management processes. Design of logistic systems. Logistics design for distribution channels: methodology and techniques transport planning, operations and economic appraisal of transport systems including infrastructure and services. Emerging trends in logistics: Logistics outsourcing, E-Commerce logistics, Reverse logistics, Third party logistics and Global logistics. Logistic information systems: Role of technology, Communication Technology, Automated Material, and warehousing Simulation.

### **BMS 320: STORAGE AND WAREHOUSING MANAGEMENT**

Introduction and definition of terms. Principles and developments for stores and warehousing management. Location of stores and facilities; material handling equipment. Warehousing management. Receiving function; Stock location systems, layout and internal movement of goods. Coding systems. Issuing and dispatch of stock. Transport systems. Safety and legal aspects of moving materials.

### **BMS 321: SUPPLIER QUALITY MANAGEMENT**

An Overview of Supplier Quality Management; Definition, Importance. Managing Supplier Quality; Role of the Buyer. Purchasing Role in Managing Supplier Quality. Supplier Development. Performance and Conformance Quality and Quality Dimensions; Supplier Quality

Assessment (SQA); Measuring Supplier Performance; Supplier Quality Description, Supplier Process and Performance Improvement. Supplier Certification.

### **BMS 322: GENERATION OF REQUIREMENTS**

Introduction. Methods of communicating material needs. Purchase descriptions. Analysis of total acquisition costs and methods. Independent and dependent demand. Development of specifications in purchasing. Standardization and variety reduction. Make or buy decisions. Outsourcing . Purchasing and new product development. The procurement plan. Materials planning and budgeting.

### **BMS 400: MANAGEMENT OF INFORMATION SYSTEMS**

Information technology and organizations. Sources and types of business information. Information systems approach to management. Management Information Systems (MIS): development and design approaches. Business Information Systems: types, analysis and design, automation requirements. A case study of issues involving the design of a selected. Management Information System.

### **BMS 401: PRODUCTION AND OPERATIONS MANAGEMENT**

#### **[PREREQUISITE: BMS 301]**

Types of production and their implication for management, the management and control of organizational systems; techniques for managing inventories and raw materials, plant layout work and production scheduling, and quality control.

### **BMS 402: ADVANCED OPERATIONS RESEARCH**

#### **[PREREQUISITE: BMS 304]**

Goal programming: formulation, solution and applications. Integer programming; Modeling, and solution procedures. Dynamic Programming; nature, terminology, solution techniques and applications. Non-linear programming: solution and applications. Heuristics approaches and applications.

### **BMS 403: ELECTRONIC COMMERCE**

Elements and applications of electronic commerce. Internet and the World Wide Web. Launching the business on the Internet; Hardware, Software and Network infrastructure requirements. E-payments, e- security, encryption, e marketing. Place of e-commerce in marketing. Legal and ethical issues of e-commerce. E-commerce application software. Role of government policy in the success or failure of e-commerce environments.

### **BMS 404: ECONOMETRIC MODELS AND METHODS**

#### **[PREREQUISITE: BMS 302]**

Nature and scope of Econometric Models. Methods of Econometric research. Multiple Regression and Correlation analysis. Properties of classical least square estimates. Maximum likelihood estimators. Computer applications. Business applications of econometric theory.

### **BMS 405: DECISION SUPPORT AND EXPERT SYSTEMS**

**(PREREQUISITE: BMS 400)**

Theory, structure and construction of Decision Support (DSS). Types of DSS. Expert systems (ES); structure and basic of design, data, knowledge, models and user interface. Applications of DSS and ES.

**BMS 406: PROJECT MANAGEMENT**

**[PREREQUISITE: CBA 200]**

Type of Project; social and economic. Project Identification, and Preparation. Nature and Context of Project Management. Project Life Cycle, Roles, Interfaces and Systems. Project Planning. Estimation, Resource Analysis, Justification and project evaluation technique. Teams and Organization. Project Control Systems and Approaches. Role of management and leadership. Project Review.

**BMS 407: LOSS MODELS**

**[PREREQUISITES: BMS200, BMS 311]**

Insurance loss modeling. Loss distribution estimations: point and interval estimation, and tests of appropriate statistical hypotheses. Claim severities: Empirical and parametric models. Failure properties: moments, rates, and mean residual lifetime. Expected value function. Loss Models construction: Mixing and Transformation. Maximum likelihood estimation of parameters. Claim Frequencies Models. Aggregate Claims Models: recursive approach. Discretization of the severity model. Analysis on per pay payment and per loss basis. Effects of deductibles, maximums, and coinsurance.

**BMS 408: GRADUATION MATHEMATICS**

**[PREREQUISITE: BMS 302, 311]**

Introduction to graduation; statistical considerations. Preparation and testing of graduations of mortality tables; graduation by the moving-weighted average, graphic, Whittaker, Bayesian, Parametric as well as Smooth-junction interpolation methods.

**BMS 409: MARINE INSURANCE**

**(PREREQUISITE BMS 101)**

Introduction, marine insurance and trade, insurance broker and slip. Types of marine policies, valued and unvalued policies, hull, cargo and freight. Void and voidable policies, specialist aviation insurers, principles of insurance. The assignment clause, waiver clause, institute clauses, Warsaw convention and Hague protocol. Factors determining marine rates, marine claims, average in marine insurance, Loss adjusting and surveying. Lloyds, marine and aviation reinsurance. Contemporary issues in marine insurance

**BMS 410: INSURANCE BROKERAGE**

**[PREREQUISITE: BMS 101]**

The functions of a broker. Marketing of various lines of insurance. The relationships among brokers. Considerations in choosing a broker. The law relating to insurance brokerage in Kenya. Marketing of brokerage services. Financial aspects of insurance brokerage firms. Claims Management. International brokerage.

**BMS 411: CREDIBILITY AND RUIN THEORY**

**[PREREQUISITE: BMS 311]**

Statistical overview: Conditional distributions and expectation. Mixed distributions, Maximum likelihood estimation, Bayesian estimation and unbiasedness. The linear exponential family. Credibility Theory: Type of Credibility. Greatest Accuracy Theory: Bayesian approach and premium. The credibility premium. Credibility Models. Exact credibility. Ruin Theory: The adjustment coefficient. Basic integral differential equation: solutions forms as well as optimal aggregate loss and the general solution.

**BMS 412: INTERNATIONAL INSURANCE MARKETS**

**[PREREQUISITE: BMS 101]**

The role of insurance in local, regional and international trade. Market structures. Brokers and Agents. Financing problems for various risks. Financing problems. Types of products. Reinsurance. Retrocession abroad and its impact on developing countries. Travel insurance. International covers.

**BMS 413: MOTOR INSURANCE**

Development of motor insurance in Kenya. The Road Traffic Act. Yellow Card. Covers available under motor vehicle insurance. Rating factors relating to vehicle insurance. Problems, facilities and systems relating to motor vehicle repairs. Control of repair costs. Activities related to construction and repair of vehicles. Control and safety considerations. Proposal forms' Policy forms. Goods in transit: assessment. Rating and under-writing. Claims Procedures. The motor insurance pool. Challenges.

**BMS 414: ACTUARIAL SCIENCE II**

**[PREREQUISITES: BMS 311 AND BMS 314]**

Theory and applications of demography: Conventional and adjusted measures of mortality rates; measures of fertility; demographic characteristics and trends in Kenya and globally; evaluation of demographic data; mathematics of population projections; mathematics of stable and stationary populations; introduction to the applications of demographic characteristics and trends to actuarial work; selection and heterogeneity; social and economic effects on mortality and the use of single figure indices; standard mortality tables; risk classification.

**BMS 415: RESEARCH PROJECT**

**[PREREQUISITE: BMS 305]**

The student will be required to write a project report in the area of specialization either based on an attachment, an independent study, or any other mode the departments may prescribe.

**BMS 416: ASSURANCE OF THE PERSON**

**[PREREQUISITE: BMS 101]**

Economic value of human life. Insurable personal risks. Identification of insurable needs of individuals. Long-term contracts. Term, whole life, endowment, Unit Linked policies and annuities. With and without profit policies. Policy document. Title to life policies. Legal aspects of life assurance. Assessment rating and acceptance of risks. Life assurance products marketed in Kenya. Personal accident and sickness insurance. Disablement and medical expenses. Group life assurance. Assured pensions schemes. Mutual funds. Social insurance. Underwriting and claim considerations.



**BMS 417: LIABILITY INSURANCE  
(PREREQUISITE BMS 308)**

Principles of insurance relating to liability insurance. Public liability, personal liability, household insurance, professional indemnity, libel and slander and third party insurances. Manufacturers & vendors liability, products liability and products guarantee. Employers liability, legal expenses insurance and workmens compensation. Agricultural risks, catering risks, entertainment risks and miscellaneous risks. Liabilities of hospitals, nursing homes, schools and educational authorities. Public and local authorities. Risk improvement and reinsurance

**BMS 418: MEDICAL INSURANCE  
[PREREQUISITE: BMS 416]**

Disorders and diseases. Non-medical risk factors. Types of medical schemes. Assessment of extra risks. Financial underwriting. Mechanics of underwriting. Exclusions in medical schemes. Handling of HIV/AIDS in medical schemes. NHIF. Managed health care. Claims management. The HMOs. Challenges in Management of medical schemes. Contemporary issues.

**BMS 419: PRODUCTION PLANNING AND CONTROL  
(PREREQUISITE: BMS 401)**

Production planning; planning and scheduling techniques including PERT/CPM. Network Analysis Applications. Operations management; fundamental Concepts, Pareto Analysis, Material Requirement Plans (MRP) Techniques. Analysis of constraints to Production planning and scheduling.

**BMS 420: PROJECT MONITORING AND EVALUATION  
(PREREQUISITE BMS 401)**

Project Control. Project Auditing: Purposes of Evaluation, The Project Audit Life Cycle, Construction and use of the Audit Report, Essentials of an Audit/Evaluation, Measurement. Project Communication, Importance of Communication, The Process of Communication, Informal Communication, Project Meetings, The Role of Technology, Communication Links, Establishing Progress Reporting System, Purpose, Contents, and Frequency of Reports. Types of Project Status Reports, Variance Reporting Tools, Using WBS for a Reporting Structure, Project Status Review. Change Control. Pre-requisite for Effective Control, The Project Quality Plan. Project Termination.

**BMS 421: INVENTORY CONTROL AND MANAGEMENT  
(PREREQUISITE BMS 401)**

Defining inventory organisations; maintaining items. Overview. Inventory control concepts and fundamentals. ABC analysis. Inventory accuracy. Cycle counting. Physical inventory. Defining and maintaining cycle count. Scheduling and requests. Defining recounts, adjustments and approvals.

**BMS 422: CONTRACTS AND LEGAL ASPECTS IN PURCHASING**

Introduction : Definition of contracts, Elements of a valid contract, Reconciliation of buyers'

and sellers' terms and conditions. Types of contracts. Long term contracts in alliance and partnerships. Unique types of contracts. Preparation of contracts. Settling contractual disputes. Legal authority and personal liability of purchasing manager. Procurement legal framework in Kenya. International procurement legal framework applicable to Kenya. Supply of goods and services Act. Uniform commercial code. Contract law. Cancellation of order and breach of contract. Patents and intellectual property. Other laws affecting purchasing.

### **BMS 425: STRATEGIC PROCUREMENT MANAGEMENT**

Introduction to procurement strategy. Purchasing and Supplies policy and strategy. Corporate purpose and scope. Levels of organizations strategy. Generic strategies. Developing and managing procurement strategy techniques. Development of product specific purchasing and Supplies objectives. Types of supplier relationships in relation to policy and strategy for Supplies of individual products and services. Implementation of procurement strategy .Evaluation and selection of strategic options.

### **BMS 423: SUPPLIER RELATIONSHIP MANAGEMENT**

Relationship spectrum. Effective management of buyer supplier relationships, supplier base optimization. Models of supply relationships. buyer supplier behavior in relationships. Natural life cycle of supply relationships. Developing and managing relationships with suppliers. power and dependency in supply relationships. System communication, e-procurement scenario, global supply relationship; supply relationship termination.

### **BMS 424: NEGOTIATION SKILLS**

An overview of elements of an effective purchasing system. Negotiation environment. Fundamentals: Purchasing techniques, Operational cost reduction mechanisms, Price and cost analysis methods, Quality and Service. Negotiation essentials: Definition, Negotiation phases, Types of bargaining, Contract negotiation competencies, Self-assessment survey. Negotiation targets/objectives, Planning contract negotiations, negotiations strategy and tactics, Executing contract negotiations, forming and documenting the contract or purchase order. Use of case studies.

### **BMS 426: PUBLIC PROCUREMENT MANAGEMENT**

Introduction to public procurement. Public procurement and disposal act (PPDA) 2005. Internal organization of public entities relating to procurement. General procurement rules in public organizations. Comparative study of public procurement systems: Germany, US federal government, China, South Africa, Uganda. Tendering procedure and Public procurement procedures. Administrative review of procurement proceedings. Disposal of stores and equipment. Cost optimization techniques in public procurement. Ethics and professionalism in public organisations.

### **BMS 427: INTERNATIONAL PURCHASING**

An overview of domestic and off-shore sourcing. Development and execution of offshore global buying program. Alignment of organizational goals and procurement plans. Consideration of need for international buying office. Business customs and courtesies of key nationalities. International buyer and seller obligations.

Import customs laws and regulations. Antitrust laws and trade acts. United nations Conventions. Global trade barriers.