Master Consultants Ltd
Growing People, Growing Organizations

COURSE OUTLINE

INTERNATIONAL DIPLOMA IN
COMPUTERS & IT IN
BUSINESS & MANAGEMENT

Westcom Point, 2nd Floor, Mahiga Mairu Avenue, Westlands, Nairobi.
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Module 1 - Computers and the Functions of Management

The importance of management
The role of information in decision-making
Computers as an effective tool for management
Principles of management
The functions of management:
    planning
    organising
    co-ordinating
    motivating
    controlling
The objectives of enterprises
The profit motive
Policies and policymaking:
    the interpretation and implementation of policies
Research and planning
Organising and organizations
Coordination and managerial communication
Setting standards
Controlling and maintaining records
Motivation and mentoring
The functions of management in practice

Module 2 - Computers in Business and Administration

The place and use of machines in business and administration
The beginning, first generation technology
Mass technology:
    typewriters and word-processors analogue
    photocopiers and fax machines digital
    processing and multi-purpose machines
Technology in business and industry
The rise and development of the computer:
    second generation: mainframe computers
       programming languages and business logic
    third generation: minicomputers
      computer programming
    fourth generation: microcomputers
      the PC revolution and the PC standard
      characteristics of fourth generation systems:
        variety and personalisation
        compatibility, graphical user interfaces, WIMP
Artificial intelligence
Decision support systems and heuristics
Characteristics of computers:
    speed
    storage and retrieval of data

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diligence
accuracy
    meta-data, validation and verification of data
Limitations of computers:
    the manager's role in their proper use
The use of computers in a variety of business situations

Module 3 - Computer Systems: Hardware

Case study of information flow within a business
    operations to be performed - manual operation
    the computerised version:
        information flow between departments
        the advantages
Digital information - The Building Blocks of a Computer System
Extending representations of information:
    the importance of context
Storage of digital information
The central processor (CPU)
Linking it all together:
    controllers, processors and clocks
Interfacing the CPU with peripheral equipment
Random access memory:
    difference between sequential and random access
Memory management:
    memory-mapping and memory cache
Tuning and refining the system
Getting started - activating a system
    Bootstrapping:
        basic input output system (BIOS)
        read only memory
        revision and patching
    Order management software
    Hardware components:
        Input devices: keyboard, mouse, trackball, voice recognition, scanner
        Output devices: barcodes and barcode readers, printers, VDUs
    Recent developments:
        solid-state storage, 64 bit multi-core processors
        tablets and hybrids, computer and human interaction
    Appendix: Number Systems and their Application to Digital Computing

Module 4 - Computer Systems: Software and Data

Stand-alone or turnkey systems:
    practical application
Operating systems:
    multi-user systems
    the clockface analogy
Interrupt-driven and priority operating systems
Distributed systems and local processing

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Where should data exist?
   orthogonality
Programming tools
Pseudo-code and high level languages:
   COBOL and BASIC
Compilers and interpreters
Specialised high level languages:
   business applications
Searching and reporting
Exporting and sharing data and objects
Modern operating systems, user identifications, passwords
Stored procedures and macros

Module 5 - Practical Uses of Computer Systems

Best practice
Measurable objectives
   effectiveness and efficiency
   process control
   historical profiles
Operational intelligence
   face to face operations
   business tools and mobility
   web-based operations
Website customer use of computers and PDA screens:
   navigation principles
   alternative screen layouts
   complementary marketing
Examples of why businesses computerise operations:
   estate agency and property management
   hotel and catering industries
   brokerage (insurance or stocks and shares)
   retail: clothing and footwear
   gambling: pools, lotteries, totalisers and bingo
   professional sport: coaching and fitness analysis
The link to business intelligence and insight

Module 6 - Computers and Management Information

Functions of management and practical uses of computers
Case Study:
   background
   the need to modernise
   information needs for decision making
      forecasting and planning
      sales graphs:
         linear curves and exponential curves
      profitability forecasts
   the role of computers in forecasting and analysis:
      spreadsheets:

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from where the information derives
information flow diagrams
profit ration per week
comparison of costs and income
additional factors:
    gate price per unit
    delivered units
summary of factors defining the current position
competitors' sales
business models and scenario modelling:
    income forecasting
    gate price derivation
3D line-graphs, stacked column graphs, multi-column graphs
Business Intelligence:
    knowledge about the customer:
    demographic profiling
Predicting customer preferences:
    estate agents and mortgage brokers
    online industries:
        online leisure, online shopping, online booking and reservations

Module 7 - Computers and Communication

Communication defined:
    formal definition and example
    components of communication
Communication in business and management:
    internal and external communication lines of
    communication
Communication terms, devices and protocols
    telecommunications
    telephone systems; end-to-end systems; analogue and digital
    broadband digital communications; modems, fibre optics
    global networks, distribution points
The internet
    routing, dedicated links
    IP numbers, transmission control protocol/internet protocol
    universal resource locators (URLs) and web requests ports,
    http://, protocols, session variables
    error checking and resilience: file level and data-packet
    bandwidth: network speed and throughput
    compression and streaming
Computer Mediated Communication
    electronic mail (email) and simple messaging service (SMS)
    fax and optical character recognition (OCR) video-
    conferencing
Business Communication Overview

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advantages of non-electronic communications practical
managerial considerations of email: advantages,
disadvantages, supervision

Module 8 - Computers and Accounting

The need for accurate and timely accounts:
    operational intelligence
    strategic decisions
    investors, shareholders, stakeholders
Manual bookkeeping systems
    double-entry, ledgers, accounts
    audits and tax trails
Computerised accounting systems
    master records, orthogonality,
    data entry, procedures, audit log
    modules, business requirements
    examples of computer generated reports
Financial data flows
    real and notional transfers, transactional ledger
Computer generated reports
    uses, benefits
User-configurable software
    standardisation, flexibility, regulations
    accountancy software

Module 9 -   Digital and Printed Media -
Beyond Word processing and Desktop Publishing

Traditional print media
Word processing:
    producing word processing documents
    static features:
        page set-up, tabbing, column guides, paging, fonts, etc
    dynamic features:
        search and replace, spelling and grammar checks,
        review and collaboration tools concordance and
        research tools
Desktop publishing:
    business use, specialists, print agencies
Publishing software
    examples, Microsoft Publisher
Graphic design and colour theory
    colour wheels, colour relationships
    copy-writing
Digital media
    web-servers, web-browsers, websites,
    directories, mark-up languages, html tags
    content management systems (CMS)
    tweets, blogs, social media

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Web site production teams:
    content, designers, engineers, developers, quality assessment

Module 10 - Business Continuity: Choosing and Defining a Computer System

Business continuity
Systems life-cycle:
    planning specifying and sourcing computer systems
    implementing, testing and accepting computer systems
    running, maintaining and reviewing computers systems
    Waterfall model
Drives towards computerisation:
    expansion, competition, research, funding, staff, experience
Choosing a computer system:
    scale and scope: project brief
    feasibility: technical and management issues
    requirements: proposers, stakeholders, project boards, external experts
    pilot/prototype: fit for purpose
    specification: instructions, testing strategy, agreement criteria
    project planning: project execution and control, timelines, interdependencies
      project software
    financial terms, penalties
Project management companies
Joint project committees:
    communications, deadlines, modularising tasks, documentation
    workstreams, integration
    wireframe diagrams, visual concept prototypes
    technical and functional specifications
Test plans, acceptance criteria plans, black-box testing
Post acceptance planning
Case study

Module 11 - Business Continuity:
Delivering, Testing and Introducing a Computer System

Delivering a computer system:
    procuring hardware and software
    building and developing functionality
    creating and configuring the system environment
Testing a computer system:
    assuring components work as defined
    assuring interworking
    ensuring functionality is delivered
Introducing a computer system:
    maintaining uninterrupted operations
    system validation
Water-fall stages:
    build and integration
      formal specifications, specialisms, lead technical specialists, systems architect
    quality assurance

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compliance, sub-systems, integration and regression testing
go-live
big- bang, parallel running, transition, phased deployment
Build and integration
sub-project teams, skill sets, team-work, cooperation
Management and administration of project work
project build infrastructure
automated push and pull
development repository software
checking work compiles
Case study
Agile approach to project management
Role of the managers, knowledge domain
Project pitches and presentations
Quality assurance and user acceptance testing (UAT)
release candidates, risk-logs, tests-cases, test-suites
Testing:
accessibility, external QA and UAT, parallel, simulated, capacity, security
Training, training plans, staff morale

Module 12 - Business Continuity:
Efficient Running and Maintenance of a Computer System

Emergency and operational planning
identifying risks
types of events which can affect operations
Preparing sites for computer systems
operations rooms, server rooms, plant rooms, communications rooms
Maintaining electrical supply
generated supply, battery supply
spikes, surges, UPS
prioritising systems and functions
Back-up communications supplies
Catastrophic hardware failure
data back-up systems: NAS, RAID back-up procedures; dangers of
not having them; back-up software hardware purchasing strategies

Disaster recovery
policies, procedures, infrastructure
load-balancers
Physical security
temperature and humidity
remote desktop connection (RDC)
access policies, CCTV, entrance/exit points, key-pads, codes
Cyber-attack
denial of service attacks, reasons for attacks, preventing attacks encryption,
personal identification numbers (PIN), secondary authentication staff
awareness and training
Operating practice and procedures
office-use only, passwords, encryption

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Folders and permissions systems
Domain administrators
Staging deployments
Managerial adherence to governance and regulation