



SCHOOL OF SCIENCE AND TECHNOLOGY

SHORT COURSES FOR MAY 2024– JANUARY 2025

Introduction

As the country embarks on achieving the Malawi's Vision as enshrined in the Malawi 2063 that focuses on uplifting the nation to an industrialized upper middle-income country by 2063, there is need to provide and promote training in areas that drive the economy. The nation's vision and development agenda hinges on 3 pillars i.e., Agriculture Productivity and Commercialization, Industrialization, and Urbanization. In recognition of such a drive, MUBAS through School of Science and Technology is offering short courses tailor-made to refresh and upgrade low and middle managers who directly participate in economic development through involvement in Water, data analysis, Air, Soil and General Quality Assurance. Therefore, the Malawi University of Business and Applied Sciences through School of Science and Technology, as a development partner of Government, will conduct 6 certificate courses that are part of the modules from the School.

Department of Mathematical Sciences

Short Course 1: Mobile Data Collection Using ODK & Kobo Tool box for Monitoring and Evaluation

Introduction

Data collection and monitoring and evaluation (M&E) have always been an integral part of development work. In the past, these tasks were performed with paper and pen, which made them prone to error, difficult to conduct on a large scale, and high on transaction costs.

ICT tools such as mobile devices and software that allow users to create surveys, collect, manage and upload data to storage facilities in real time, have reduced the conventional challenges associated with remote data collection and M&E.

If you have always wanted to learn how to collect, manage and analyse project data using mobile devices, this training course is for you. This training course also comes with additional M&E and GIS modules to help participants put the skills acquired into perspective. The GIS module will help participants to work with spatial data.

Target Group:

Government, project teams, NGO's, development practitioners, consultancies, etc, that are typically employed as project managers and directors, M&E specialists, technical specialists, and researchers.

Mode of Delivery:

Face to Face including case studies, group work and discussion.

COURSE CONTENT:

1. Section 1

- M&E and mobile data collection
- Benefits of mobile data collection for M&E
- Introduction to common mobile based data collection platforms
- Challenges of mobile based data collection
- Data aggregation, storage and dissemination

2. Section 2

- Overview of available mobile phone-based data collection methods
- Types of questions and their data types
- Questionnaire/Form logic
- Extended data types geoid, image and multimedia
- Survey Authoring
- Design forms using web interfaces
- Hands-on exercise
- ODK Build
- Kobo Toolbox
- Preparing mobile devices for data collection
- Installing application: ODK Collect
- Configuring the device (Mobile phones)
- Uploading the form into the mobile devices
- Hands-on exercise

3. Section 3

- Advanced survey Authoring: XLS Forms
- Introduction XLS forms syntax
- New data types
- Notes and dates
- Multiple choice questions
- Multiple language support
- Hints and metadata
- Hands-on exercise
- Conditional survey branching
- Required questions
- Constraining responses
- Skip: Ask Relevant Questions
- The specify other

- Grouping questions
- Skipping many questions at once (Skipping a section)
- Repeating a set of questions
- Special formatting
- Making dynamic calculations

4. Section 4

- Hosting survey data: cloud hosting
- Google Apps Engine
- ODK Aggregate
- Kobo Toolbox
- Formhub
- Hosting survey data: Local server hosting
- Downloading data
- Manual download (ODK Briefcase)
- Using the online server interface
- Hands-on exercise

Course fee:

MK150,000.00 per participant for 5 days. The course fee covers the course tuition, training materials, two break refreshments.

Registration dates:

01st April to 02nd May, 2024

Training dates:

06th May to 10th May, 2024

Training Venue:

ODEL training centre located at MUBAS

Department of Computer Science and Information Systems

Short Course 2: Artificial Intelligence (AI) for Data Collection

Introduction

Big data refers to a new paradigm in how we process data whose volume grows exponentially with time, has a high velocity and greater variety. These are also known as the 3 Vs of Big Data and are features that make it hard to manage and analyse. Big data takes the form of messages, updates, and images posted to social networks; readings from sensors; GPS signals from cell phones, and more. One of the biggest barriers to AI implementation and development is collecting and preparing the necessary data. This course gives an overview of methods for data collection and preparation using artificial intelligence techniques.

Target Group:

Data managers, librarians, any data custodian or analyst.

Mode of delivery:

Face to face, practical.

COURSE CONTENT:

1. An introduction to Big Data and its processing paradigms
2. How Google applies Big Data: indexed pages, real-time data feeds, sorting tools, knowledge graphs, literal and semantic search, and targeted advertising.
3. Types of data and processing tasks (video, sensors, images, text, sounds)
4. Data cataloguing and the importance of meta-data.
5. Data collection methods including automated techniques: pre-packaged data, public crowdsourcing, private sourcing, automated data collection such as web-scraping, web-crawling, using APIs.
6. An introduction to machine learning techniques: classification and prediction
7. Text analysis: word frequencies, sentiment analysis, optical character recognition workflow, topic modelling.
8. Image analysis: object detection, facial recognition, boundary recognition, movement recognition.
9. Sound analysis: classification, speech to text tools.
10. Ethical aspects of big data.

Course fee:

MK150,000.00 per participant for 5 days. The course fee covers the course tuition, training materials, two break refreshments.

Registration dates:

01st May to 20th June, 2024

Training dates:

24th June to 28th June, 2024

Training Venue:

ODEL training centre located at MUBAS

Department of Mathematical Sciences

Short Course 3: Statistical Data Analysis

Target group:

Career professionals, researchers from government and non-governmental organizations, and postgraduate students.

Mode of delivery:

Face to Face including practical sessions, case studies, group work and discussion. Schedule of activities and materials will be shared upon registration.

COURSE CONTENT:

1. Variables and classification of data
2. Sampling and data collection methods using Open Data Kit (ODK)
3. Data presentation
4. Descriptive statistics using SPSS and R
5. Analyzing continuous data using SPSS and R
6. Analyzing categorical data using SPSS and R
7. Task automation, data analysis, and data visualization with Python

Course fee:

MK150,000.00 per participant for 5 days. The course fee covers the course tuition, training materials, two break refreshments.

Registration dates:

01st July to 10th August, 2024

Training dates: 12th August to 16th August, 2024

Training Venue:

ODeL training centre located at MUBAS

Department of Physics and Biochemical Sciences

Short Course 4: Food Safety and Hygiene

Target Group:

The training workshop is for those managing, supervising, monitoring or implementing a food services in hotels, lodges and many companies.

Mode of delivery:

The workshop will be face to face. There will be presentations, case studies, group work and discussions.

COURSE CONTENT:

1. Introduction to food hygiene and safety
2. Good Manufacturing Practices (GMPs) and Good Hygiene Practices (GHPs)
3. Personal hygiene
4. Illnesses and injuries in a food factory
5. Food contamination
6. Cleaning, sanitation and waste management
7. Pest control and management
8. Storage and transport of raw materials and products
9. Hazard Analysis Critical Control Point (HACCP) principles

Course fee:

MK150,000.00 per participant for 5 days. The course fee covers the course tuition, training materials, two break refreshments.

Registration dates:

01st September to 30th September, 2024

Training dates:

07th October to 11th October, 2024

Training Venue:

ODeL training centre located at MUBAS

Short Course 5: Occupational Health and Safety

Target group:

Middle level managers and supervisors working with companies/industries, Occupational Health and Safety Inspectors, Environmental Health Officers, Mining officers, Occupational Health and Safety trainers.

Mode of delivery:

Face to Face including case studies, group work and discussion. Schedule of activities and materials will be shared upon registration

COURSE CONTENT:

- i. Introduction to Occupational Health and Safety Hazards
- ii. Risk Assessment
- iii. Hierarchy of controls
- iv. Fire safety management
- v. Noise pollution assessment and control
- vi. Working in confinement spaces
- vii. Working at height
- viii. Safety Culture

Course fee:

MK150,000.00 per participant for 5 days. The course fee covers the course tuition, training materials, two break refreshments.

Registration dates:

01st November to 30th November, 2024

Training dates:

09th December to 13th December, 2024

Training Venue:

ODEL training centre located at MUBAS

Short Course 6: Monitoring and Evaluation for Agriculture and Rural Development

Introduction:

Agriculture forms the backbone of many developing countries and is the main economic activity for the rural communities. Since its modest beginnings, the agricultural sector has become increasingly complex and multifaceted. The challenge agriculture faces today is how to feed the world population in an equitable manner while protecting the environment from irreversible negative changes. M&E tools and techniques play a key role in ensuring that Agriculture and Rural Development (ARD) projects are designed, implemented as planned to aid in ending hunger and poverty.

This course equips the participants with adequate skills to develop and manage robust M&E systems for effective management of ARD projects and programmes. The

participants are introduced to M&E frameworks indicators, tools and techniques for M&E for ARD.

Target group:

Researchers, project staff, managers, development practitioners, managers and decision makers who are responsible for project, program or organisational-level M&E in Agriculture and Rural Development programs.

Mode of delivery:

This course will be delivered by our skilled trainers who have vast knowledge and experience as expert professionals in the fields. The course is taught through a mix of theory, practical activities, group discussion and case studies. Training materials will be provided to the participants upon completion of the training.

COURSE CONTENT:

1. Introduction of M & E
2. Agriculture & Rural Development policy issues
3. M & E frameworks in ARD
4. Agricultural and Rural Development indicators
5. M & E system and M& E planning in ARD
6. Data management for M & E in ARD projects
7. Gender integration in M & E for ARD
8. Performance Evaluations of ARD programs
9. Impact evaluations for ARD
10. M & E results use and dissemination

Course fee:

MK150,000.00 per participant for 5 days. The course fee covers the course tuition, training materials, two break refreshments.

Registration dates:

01st December, 2024 to 25th January, 2025

Training dates:

27th January to 31st January, 2025

Training Venue:

ODeL training centre located at MUBAS

Registration process

Register with jmutepuwa@mubas.ac.mw or hmapoma@poly.ac.mw and make payment to: Applied Sciences Projects Account Number: 1001043303, National Bank of Malawi; Chichiri; and send proof of payment to dean-appliedsciences@poly.ac.mw. For enquiries contact jmutepuwa@mubas.ac.mw or 0884 568 263, / hmapoma@poly.ac.mw or 0991 247 701.