**CBN COLLABORATIVE POSTGRADAUTE PROGRAMME**

**UNIVERSITY OF IBADAN SCHOOL OF BUSINESS**

**WORK PLAN**

**NAME OF LECTURER:**

**COURSE: MBC 725 RISK AND FRAUD ANALYTICS**

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| **STUDY WEEK**   | **TOPIC** **SUB-TOPIC**  | **RESULTS** **LEARNING**  | TIMEHrs  | **METHODS**  | **Suggested Videos** |
| **1**   |  1.0 Introduction to Risk and Fraud Analytics1.1 Concept of Risk 1.2 The Risk Environment1.3 Evolution of Fraud Analytic1.4 Which businesses are affected?1.5 The Fraud Triangle1.6 Characteristics of a Fraud Data Scientist  | The student can: * Briefly explain the term risk and its various perspectives
* What are the features and classifications of risk?
* Explain the various risk environment: economic, political, social, physical assets, personnel etc.
* What is batch production?
* Give a historical background of fraud in the global economic environment
* What is fraud?
* What are the categories of fraud?
* What are the characteristics of fraud?
* What type of organisations are prone to frauds?
* Briefly explain the notion of fraud triangle.
* What are the features of a fraud data scientistoranalyst?
 | 3  | * The students will learn through a combination of face – to - face contact and guided study.
* Personal contact sessions will include: Presentations, Case Study analysis and Quizzes.
* Guided study will include text readings and the use of a wide range internet based resources.
* Lectures, t**utorials and field trip/industrial visit (if any),**
 |  There are many good videos available on YouTube    |
| **2** | **2.0 Fraud Detection** 2.1 Data Driven Fraud Detection2.1.1 Precision2.1.2 Operational Efficiency2.1.3 Cost Efficiency2.2 Fraud Cycle2.2.1 Detection2.2.1.1 Detection Methods2.2.1.2 Indicators and Warnings2.2.1.3 Tools and Techniques | * Explain the concept of data-driven fraud detection strategies

 * Explain the factors that made up the fraud cycle in organisation.
* List and explain fraud indicators and signs in organisations.
* Explain the various tools and techniques for fraud detection in organisations.
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| **3** | **3.0 Fraud Prevention**3.1 Developing Strategies3.2 Developing Sound Ethical Culture3.3 Developing Sound Internal Control System3.4 Fraud Response Plan3.5 Corporate Policy and Fraud Response | * Explain the concept of Fraud Prevention.
* Explain the strategies for fraud prevention in organisations
* Explain the process for developing effective fraud prevention strategies.
* Explain the importance of sound ethical culture and internal control system in fraud prevention.
* Provide comprehensive explanations on the concept of fraud response strategy
* Explain the relationship between corporate policy and effective fraud response strategy
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| **4**    | **4.0 Data Collection, Sampling and Pre- processing**4.1Data Collection Procedure4.2 Type of Data Sources4.3 Merging Data Sources4.4 Data Elements4.5 Sampling and pre-processing | * Discuss the procedures to be followed for effective data collection.
* Explain the various sources of data
* What is merging of data sources?
* Explain how it is use in data processing
* What are data elements?
* Explain the concept of sampling and pre-processing
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  |  There are numerous videos available on the Internet on data collection, sampling and pre-processing.  |
| **5** | **5.0 Data Cleaning, verifying, and normalizing**5.1 Missing Value Analysis5.2 Outlier Detection and Treatments 5.3 Principal Components Analysis   | * Discuss the concept of data cleaning
* Discuss the concept of missing data
* Explain the procedure for missing data detection.
* Explain the various imputation techniques
* Explain the concept of outlier
* Discuss the various methods for outlier detection
* Explain the outlier treatment techniques
* Discuss the concept of factor analysis in data management
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| **6**  | **6.0 Predictive Analytics for Fraud Detection**6.1 Introduction6.2 Linear Regression6.3 Logistic Regression 6.4 Building a Logistic Regression Scorecard  | * What is predictive analytic?
* Explain the concept of regression an effective predictive technique
* Explain the various assumptions of regression
* Explain the concept of logistic regression,
* Explain the various assumptions of logistic regression
* Discuss the various types of logistic regression
* Explain the process for building a logistic regression scorecard
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| **7** | **7.0 Decision Tree**7.1 Decision Tree Properties7.2 Decision Tree Induction Algorithm7.2 Using Decision Tree in Fraud Analytics  | * Explain the concept of Decision Tree.
* What the assumptions of Decision Tree?
* Explain Decision Tree Induction Algorithm
* Explain how the algorithm is used in fraud analytic
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|  | **MID-SEMESTER BREAK** |  |
| **8**  | **8.0 Evaluating Predictive Models**8.1 Steps for Evaluating Predictive Models8.2 Splitting up the Dataset8.3 Evaluate the Performance of Regression Models8.4 other performance measures for predictive analytics models | * Explain the concepts and steps for evaluating models
* Explain the concept of data split
* Explain the concept of regression
* Explain the assumptions of regression
* List and explain the performance measures for predictive analytic models
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  | A. Slide Power Point Two. Note  |
| **9** | **9.0 Foundations of Enterprise Risk** **Management (ERM)** 9.1 ERM background, evolution and new world order 9.2 Foundations of ERM: Why? 9.3 Existing Enterprise Risk Management Frameworks and Standards 9.4 ERM contexts: Strategic risk management | * Explain the concept of Enterprise Risk Management
* Discuss the factors that led to the paradigm shift in risk management literature.
* Explain the ERM Frameworks and standards (Committee of Sponsoring Organisations of the Treadway Commission [COSO] and ISO31000 among others)
* Explain the definition of risk within the perspective of ERM
* Explain strategic risk management within the context of ERM
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| **10** | **10.0 Enterprise Risk Management Process** 10.1 Step of Risk Management Process10.2 Enterprise Risk Management process10.2.1 Risk programming: Vision, mission and values  | * Explain the steps of ERM process
* Explain how an organisation’s vision, mission and values relate to its ERM practices

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| **11** | **11.0 Risk Analysis** 11.1 Identification methods 11.2 Risk Assessment11.3 Decision Process  | * Explain risk analysis in the context of ERM

 * Explain the various risk identification strategies
* Explain risk assessment both in terms of frequency and severity
* Explain the various risk management techniques
* Use risk probability matrix to determine the appropriate risk management techniques
* Explain risk management decision within the context of cost benefit analysis
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| **12** | **12.0 Enterprise Risk Management Administration** 12.1 System Administration 12.2 Risk Management Structure 12.3 Key risk indicators and risk position statements  12.4 Organizational Risk Management Maturity assessments  12.5 Risk Evaluation, monitoring and reporting 12. 6 ERM and Fraud Control | * Explain the structure of ERM administration in organisation
* Explain how ERM assist organisation to identify bottle neck zones
* Explain risk maturity models
* Explain the procedure for risk evaluation, monitoring and reporting
* Establish the nexus between ERM and fraud control
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| **13** |  **13.0 Risk Culture** 13.1 The organisational value system 13.2 Risk management environment, risk psychology, and culture of discipline 13.3 Importance of common risk language 13.4 Risk Management Information System  | * What is risk culture?
* What is the place of risk culture in risk management?
* Explain the risk environment within the context of culture, psychology and ethics

 * Explain the concept of risk management information system within the organisational value system
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| **14** | **14.0 Regulation and Compliance**  14.1 Review of Risk Management Regulations14.2 Current risk management legislation, regulatory standards and | * Discuss the various risk management regulations
* Explain the influence of those regulations to Nigerian context
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|   | **REVISION WEEK** |  |
| **WEEK STUDY (WEEK 1 TO 14)**  |  |
| **FINAL EXAMINATION**  |

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**Lecturer:**   **PROGRAMME LEADER**