**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** | TIME  Hrs | **METHODS** | **Suggested Videos** | |
| **1** | 1.0 Introduction to Risk and Fraud Analytics 1.1 Concept of Risk  1.2 The Risk Environment 1.3 Evolution of Fraud Analytic1.4 Which businesses are affected?1.5 The Fraud Triangle 1.6 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 Detection  2.1.1 Precision  2.1.2 Operational Efficiency  2.1.3 Cost Efficiency  2.2 Fraud Cycle  2.2.1 Detection  2.2.1.1 Detection Methods  2.2.1.2 Indicators and Warnings  2.2.1.3 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. | 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, Hands-on, and field trip/industrial visit (if any),** |  | |
| **3** | **3.0 Fraud Prevention**  3.1 Developing Strategies  3.2 Developing Sound Ethical Culture  3.3 Developing Sound Internal Control System  3.4 Fraud Response Plan  3.5 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 | 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)** |  | |
| **4** | **4.0 Data Collection, Sampling and Pre- processing**  4.1Data Collection Procedure  4.2 Type of Data Sources  4.3 Merging Data Sources  4.4 Data Elements  4.5 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 | 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 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 Analysis  5.2 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 |  | * 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 hands-on sessions (if any).** |  | |
| **6** | **6.0 Predictive Analytics for Fraud Detection**  6.1 Introduction  6.2 Linear Regression  6.3 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 | 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).** |  | |
| **7** | **7.0 Decision Tree**  7.1 Decision Tree Properties  7.2 Decision Tree Induction Algorithm  7.2 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 |  | * 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, hands-on and field trip/industrial visit (if any).** |  | |
|  | **MID-SEMESTER BREAK** | | | |  | |
| **8** | **8.0 Evaluating Predictive Models**  8.1 Steps for Evaluating Predictive Models  8.2 Splitting up the Dataset  8.3 Evaluate the Performance of Regression Models  8.4 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 | 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),** | 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 |  | * 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).** |  | |
| **10** | **10.0 Enterprise Risk Management Process**  10.1 Step of Risk Management Process  10.2 Enterprise Risk Management process  10.2.1 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 |  | * 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),** |  | |
| **11** | **11.0 Risk Analysis**  11.1 Identification methods  11.2 Risk Assessment  11.3 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 | 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).** |  | |
| **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 | 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)** |  | |
| **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 | 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),** |  | |
| **14** | **14.0 Regulation and Compliance**  14.1 Review of Risk Management Regulations  14.2 Current risk management legislation, regulatory standards and | * Discuss the various risk management regulations * Explain the influence of those regulations to Nigerian context | 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).** |  |  |
|  | **REVISION WEEK** | | | | |  |
| **WEEK STUDY (WEEK 1 TO 14)** | | | | | | |  |
| **FINAL EXAMINATION** | | | | | | |

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