

**CBN COLLABORATIVE POSTGRADUATE PROGRAMME**  
**DEPARTMENT OF BUSINESS MANAGEMENT, UNIVERSITY OF NIGERIA NSUKKA**  
**WORK PLAN**  
**NAME OF LECTURER:**  
**COURSE: CBB 844 RISK AND FRAUD ANALYTICS**

STUDY WEEK	TOPIC SUB-TOPIC	RESULTS LEARNING	TIME Hrs	METHODS	Suggested Videos
1	<b>1.0 Introduction to Risk and Fraud Analytics</b> 1.1 Concept of Risk 1.2 The Risk Environment 1.3 Evolution of Fraud Analytic 1.4 Which businesses are affected? 1.5 The Fraud Triangle 1.6 Characteristics of a Fraud Data Scientist	The student can: <ul style="list-style-type: none"> <li>✓ Briefly explain the term risk and its various perspectives</li> <li>✓ What are the features and classifications of risk?</li> <li>✓ Explain the various risk environment: economic, political, social, physical assets, personnel etc.</li> <li>✓ What is batch production?</li> <li>✓ Give a historical background of fraud in the global economic environment</li> <li>✓ What is fraud?</li> <li>✓ What are the categories of fraud?</li> </ul>	3	<ul style="list-style-type: none"> <li>✓ The students will learn through a combination of face – to - face contact and guided study.</li> <li>✓ Personal contact sessions will include: Presentations, Case Study analysis and Quizzes.</li> <li>✓ Guided study will include text readings and the use of a wide</li> </ul>	There are many good videos available on YouTube

		<ul style="list-style-type: none"> <li>✓ What are the characteristics of fraud?</li> <li>✓ What type of organisations are prone to frauds?</li> <li>✓ Briefly explain the notion of fraud triangle.</li> <li>✓ What are the features of a fraud data scientist or analyst?</li> </ul>		<p>range internet based resources.</p> <ul style="list-style-type: none"> <li>✓ Lectures, tutorials and field trip/industrial visit (if any),</li> </ul>	
2	<p><b>2.0 Fraud Detection</b></p> <p>2.1 Data Driven Fraud Detection</p> <p>2.1.1 Precision</p> <p>2.1.2 Operational Efficiency</p> <p>2.1.3 Cost Efficiency</p> <p>2.2 Fraud Cycle</p> <p>2.2.1 Detection</p> <p>2.2.1.1 Detection Methods</p> <p>2.2.1.2 Indicators and Warnings</p> <p>2.2.1.3 Tools and Techniques</p>	<ul style="list-style-type: none"> <li>✓ Explain the concept of data-driven fraud detection strategies</li> <li>✓ Explain the factors that made up the fraud cycle in organisation.</li> <li>✓ List and explain fraud indicators and signs in organisations.</li> <li>✓ Explain the various tools and techniques for fraud detection in organisations.</li> </ul>	3	<ul style="list-style-type: none"> <li>✓ The students will learn through a combination of face – to - face contact and guided study.</li> <li>✓ Personal contact sessions will include: Presentations, Case Study analysis and Quizzes.</li> <li>✓ Guided study will include text readings and the use of a wide</li> </ul>	

				<ul style="list-style-type: none"> <li>✓ range internet based resources.</li> </ul>	
3	<p><b>3.0 Fraud Prevention</b></p> <p>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</p>	<ul style="list-style-type: none"> <li>✓ Explain the concept of Fraud Prevention.</li> <li>✓ Explain the strategies for fraud prevention in organisations</li> <li>✓ Explain the process for developing effective fraud prevention strategies.</li> <li>✓ Explain the importance of sound ethical culture and internal control system in fraud prevention.</li> <li>✓ Provide comprehensive explanations on the</li> </ul>	3	<ul style="list-style-type: none"> <li>✓ The students will learn through a combination of face – to - face contact and guided study.</li> <li>✓ Personal contact sessions will include: Presentations, Case Study analysis and Quizzes.</li> <li>✓ Guided study will include text readings and the use of a wide</li> </ul>	

		<p>concept of fraud response strategy</p> <ul style="list-style-type: none"> <li>✓ Explain the relationship between corporate policy and effective fraud response strategy</li> </ul>		<p>range internet based resources.</p> <ul style="list-style-type: none"> <li>✓ Lectures, tutorials and field trip/industrial visit (if any)</li> </ul>	
4	<p><b>4.0 Data Collection, Sampling and Pre-processing</b></p> <p>4.1 Data Collection Procedure 4.2 Type of Data Sources 4.3 Merging Data Sources 4.4 Data Elements 4.5 Sampling and pre-processing</p>	<ul style="list-style-type: none"> <li>✓ Discuss the procedures to be followed for effective data collection.</li> <li>✓ Explain the various sources of data</li> <li>✓ What is merging of data sources?</li> <li>✓ Explain how it is use in data processing</li> <li>✓ What are data elements?</li> <li>✓ Explain the concept of sampling and pre-processing</li> </ul>	3	<ul style="list-style-type: none"> <li>✓ The students will learn through a combination of face – to - face contact and guided study.</li> <li>✓ Personal contact sessions will include: Presentations, Case Study analysis and Quizzes.</li> <li>✓ Guided study will include text readings and the use of a wide</li> </ul>	<p>There are numerous videos available on the Internet on data collection, sampling and pre-processing.</p>

				<ul style="list-style-type: none"> <li>✓ range internet based resources.</li> </ul>	
5	<p><b>5.0 Data Cleaning, verifying, and normalizing</b></p> <p>5.1 Missing Value Analysis 5.2 Outlier Detection and Treatments 5.3 Principal Components Analysis</p>	<ul style="list-style-type: none"> <li>✓ Discuss the concept of data cleaning</li> <li>✓ Discuss the concept of missing data</li> <li>✓ Explain the procedure for missing data detection.</li> <li>✓ Explain the various imputation techniques</li> <li>✓ Explain the concept of outlier</li> <li>✓ Discuss the various methods for outlier detection</li> <li>✓ Explain the outlier treatment techniques</li> </ul>		<ul style="list-style-type: none"> <li>✓ The students will learn through a combination of face – to - face contact and guided study.</li> <li>✓ Personal contact sessions will include: Presentations, Case Study analysis and Quizzes.</li> <li>✓ Guided study will include text readings and the use of a wide range internet based resources.</li> </ul>	

		<ul style="list-style-type: none"> <li>✓ Discuss the concept of factor analysis in data management</li> </ul>		<ul style="list-style-type: none"> <li>✓ Lectures, tutorials and hands-on sessions (if any).</li> </ul>	
6	<p><b>6.0 Predictive Analytics for Fraud Detection</b></p> <p>6.1 Introduction 6.2 Linear Regression 6.3 Logistic Regression 6.4 Building a Logistic Regression Scorecard</p>	<ul style="list-style-type: none"> <li>✓ What is predictive analytic?</li> <li>✓ Explain the concept of regression an effective predictive technique</li> <li>✓ Explain the various assumptions of regression</li> <li>✓ Explain the concept of logistic regression,</li> <li>✓ Explain the various assumptions of logistic regression</li> <li>✓ Discuss the various types of logistic regression</li> <li>✓ Explain the process for building a logistic regression scorecard</li> </ul>	3	<ul style="list-style-type: none"> <li>✓ The students will learn through a combination of face – to - face contact and guided study.</li> <li>✓ Personal contact sessions will include: Presentations, Case Study analysis and Quizzes.</li> <li>✓ Guided study will include text readings and the use of a wide range internet based resources.</li> <li>✓ Lectures, tutorials and</li> </ul>	

				field trip/industrial visit (if any).	
7	<b>7.0 Decision Tree</b> 7.1 Decision Tree Properties 7.2 Decision Tree Induction Algorithm 7.2 Using Decision Tree in Fraud Analytics	<ul style="list-style-type: none"> <li>✓ Explain the concept of Decision Tree.</li> <li>✓ What the assumptions of Decision Tree?</li> <li>✓ Explain Decision Tree Induction Algorithm</li> <li>✓ Explain how the algorithm is used in fraud analytic</li> </ul>		<ul style="list-style-type: none"> <li>✓ The students will learn through a combination of face – to - face contact and guided study.</li> <li>✓ Personal contact sessions will include: Presentations, Case Study analysis and Quizzes.</li> <li>✓ Guided study will include text readings and the use of a wide range internet based resources.</li> <li>✓ Lectures, tutorials, hands-on and field</li> </ul>	

				trip/industrial visit (if any).	
	<b>MID-SEMESTER BREAK</b>				
8	<b>8.0 Evaluating Predictive Models</b> 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	<ul style="list-style-type: none"> <li>✓ Explain the concepts and steps for evaluating models</li> <li>✓ Explain the concept of data split</li> <li>✓ Explain the concept of regression</li> <li>✓ Explain the assumptions of regression</li> <li>✓ List and explain the performance measures for predictive analytic models</li> </ul>	3	<ul style="list-style-type: none"> <li>✓ The students will learn through a combination of face – to - face contact and guided study.</li> <li>✓ Personal contact sessions will include: Presentations, Case Study analysis and Quizzes.</li> <li>✓ Guided study will include text readings and the use of a wide range internet based resources.</li> <li>✓ Lectures, tutorials and field</li> </ul>	A. Slide Power Point Two. Note

				trip/industrial visit (if any),	
9	<p><b>9.0 Foundations of Enterprise Risk Management (ERM)</b></p> <p>9.1 ERM background, evolution and new world order</p> <p>9.2 Foundations of ERM: Why?</p> <p>9.3 Existing Enterprise Risk Management Frameworks and Standards</p> <p>9.4 ERM contexts: Strategic risk management</p>	<ul style="list-style-type: none"> <li>✓ Explain the concept of Enterprise Risk Management</li> <li>✓ Discuss the factors that led to the paradigm shift in risk management literature.</li> <li>✓ Explain the ERM Frameworks and standards (Committee of Sponsoring Organisations of the Treadway Commission [COSO] and ISO31000 among others)</li> <li>✓ Explain the definition of risk within the perspective of ERM</li> <li>✓ Explain strategic risk management within the context of ERM</li> </ul>		<ul style="list-style-type: none"> <li>✓ The students will learn through a combination of face – to - face contact and guided study.</li> <li>✓ Personal contact sessions will include: Presentations, Case Study analysis and Quizzes.</li> <li>✓ Guided study will include text readings and the use of a wide range internet based resources.</li> <li>✓ Lectures, tutorials and field trip/industrial visit (if any).</li> </ul>	
10	<p><b>10.0 Enterprise Risk Management Process</b></p> <p>10.1 Step of Risk Management Process</p>	<ul style="list-style-type: none"> <li>✓ Explain the steps of ERM process</li> </ul>		<ul style="list-style-type: none"> <li>✓ The students will learn</li> </ul>	

	<p>10.2 Enterprise Risk Management process</p> <p>10.2.1 Risk programming: Vision, mission and values</p>	<ul style="list-style-type: none"> <li>✓ Explain how an organisation's vision, mission and values relate to its ERM practices</li> </ul>		<p>through a combination of face – to - face contact and guided study.</p> <ul style="list-style-type: none"> <li>✓ Personal contact sessions will include: Presentations, Case Study analysis and Quizzes.</li> <li>✓ Guided study will include text readings and the use of a wide range internet based resources.</li> <li>✓ Lectures, tutorials and field trip/industrial visit (if any),</li> </ul>	
11	<p><b>11.0 Risk Analysis</b></p> <p>11.1 Identification methods</p> <p>11.2 Risk Assessment</p> <p>11.3 Decision Process</p>	<ul style="list-style-type: none"> <li>✓ Explain risk analysis in the context of ERM</li> <li>✓ Explain the various risk identification strategies</li> </ul>	3	<p>The students will learn through a combination of face – to - face</p>	

		<ul style="list-style-type: none"> <li>✓ Explain risk assessment both in terms of frequency and severity</li> <li>✓ Explain the various risk management techniques</li> <li>✓ Use risk probability matrix to determine the appropriate risk management techniques</li> <li>✓ Explain risk management decision within the context of cost benefit analysis</li> </ul>		<ul style="list-style-type: none"> <li>✓ contact and guided study.</li> <li>✓ Personal contact sessions will include: Presentations, Case Study analysis and Quizzes.</li> <li>✓ Guided study will include text readings and the use of a wide range internet based resources.</li> <li>✓ Lectures, tutorials and field trip/industrial visit (if any).</li> </ul>	
12	<p><b>12.0 Enterprise Risk Management Administration</b></p> <p>12.1 System Administration</p> <p>12.2 Risk Management Structure</p> <p>12.3 Key risk indicators and risk position statements</p> <p>12.4 Organizational Risk Management Maturity assessments</p> <p>12.5 Risk Evaluation, monitoring and reporting</p> <p>12.6 ERM and Fraud Control</p>	<ul style="list-style-type: none"> <li>✓ Explain the structure of ERM administration in organisation</li> <li>✓ Explain how ERM assist organisation to identify bottle neck zones</li> </ul>	3	<ul style="list-style-type: none"> <li>✓ The students will learn through a combination of face – to - face contact and guided study.</li> <li>✓ Personal contact sessions will</li> </ul>	

		<ul style="list-style-type: none"> <li>✓ Explain risk maturity models</li> <li>✓ Explain the procedure for risk evaluation, monitoring and reporting</li> <li>✓ Establish the nexus between ERM and fraud control</li> </ul>		<ul style="list-style-type: none"> <li>✓ include: Presentations, Case Study analysis and Quizzes.</li> <li>✓ Guided study will include text readings and the use of a wide range internet based resources.</li> <li>✓ Lectures, tutorials and field trip/industrial visit (if any)</li> </ul>	
13	<p><b>13.0 Risk Culture</b></p> <p>13.1 The organisational value system</p> <p>13.2 Risk management environment, risk psychology, and culture of discipline</p> <p>13.3 Importance of common risk language</p> <p>13.4 Risk Management Information System</p>	<ul style="list-style-type: none"> <li>✓ What is risk culture?</li> <li>✓ What is the place of risk culture in risk management?</li> <li>✓ Explain the risk environment within the context of culture, psychology and ethics</li> <li>✓ Explain the concept of risk management</li> </ul>	3	<ul style="list-style-type: none"> <li>✓ The students will learn through a combination of face – to - face contact and guided study.</li> <li>✓ Personal contact sessions will include: Presentations, Case Study</li> </ul>	

		information system within the organisational value system		<ul style="list-style-type: none"> <li>✓ analysis and Quizzes.</li> <li>✓ Guided study will include text readings and the use of a wide range internet based resources.</li> <li>✓ Lectures, tutorials and field trip/industrial visit (if any),</li> </ul>	
14	<p><b>14.0 Regulation and Compliance</b></p> <p>14.1 Review of Risk Management Regulations</p> <p>14.2 Current risk management legislation, regulatory standards and</p>	<ul style="list-style-type: none"> <li>✓ Discuss the various risk management regulations</li> <li>✓ Explain the influence of those regulations to Nigerian context</li> </ul>	3	<ul style="list-style-type: none"> <li>✓ The students will learn through a combination of face – to - face contact and guided study.</li> <li>✓ Personal contact sessions will include: Presentations, Case Study analysis and Quizzes.</li> <li>✓ Guided study will include text</li> </ul>	

<b>REVISION WEEK</b>					
<b>WEEK STUDY (WEEK 1 TO 14)</b>					
<b>FINAL EXAMINATION</b>					

Lecturer:

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**PROGRAMME LEADER**

