**CBN COLLABORATIVE POSTGRADUATE PROGRAMME**

**UNIVERSITY OF IBADAN SCHOOL OF BUSINESS**

**RISK AND FRAUD ANALYTICS**

**MODULE SPECIFICATION**

1. **Module Title:** Risk and Fraud Analytics
2. **Module Code: MBC 725**
3. **Number of credits: 3**
4. **Level: MBA**
5. **Semester: 2**
6. **Pre-requisites for admission to the module (if any)  
   The students is expected to have basic knowledge on ……..**
7. **Module Coordinator**
8. **Aims**

Upon completion of the course, students are expected to:

* 1. understand the basic concept of risk and fraud analytics.
  2. Understand the basic process of data cleaning
  3. understand the strategic role of fraud analytics in fraud detection and prevention.
  4. explain fraud cycle and apply the most effective fraud detection techniques to uncover fraudulent activities.
  5. analyze organizational settings and develop effective fraud prevention strategies.
  6. explain the steps of enterprise risk management process and how it can be applied in systematic risk management planning, assessment, and monitoring in organisations.
  7. appreciate the contribution of risk and fraud analytics in organisations by putting together different strands of risk into a unified system for efficiency and executives clarity.
  8. explain the factors that influence the development of enterprise risk management globally

1. **Summary of Content**

Risk and fraud analytics have become the evolving discipline in recent times that help in detecting irregularities and patterns within a large volume of data that sometimes become quite difficult to detect. Rapid technological advancement had helped in creating a complex global business environment that provides opportunities for some people to commit fraud. However, the same technology has and is still playing a key role in developing effective and efficient techniques for fraud detection and prevention. Fraud analytics is a multifaceted process that relies on critical thinking skills and integrates diverse methodologies into a cohesive and robust control system that enable organisations to detect and protect themselves against fraud. In recent time, large scale fraud had brought down world-renowned business firms. Consequently, risk and fraud analytics adopt a diverse approach to detect and deter fraudulent activities within the global business environment. In this module, students will be exposed to the various techniques for detecting and preventing fraud both in private and public organisations. The course covers areas such as: (1) introduction to risk and fraud analytics, (2) fraud detection and prevention, (3) data cleaning, (4) predictive analytics for fraud detection, (5) foundations of enterprise risk management (ERM), (6) Enterprise Risk Management Implementation, (7) Risk Culture in Organizations, (8) regulation and compliance.

1. **Module Intended Learning Outcomes (MILOs)**

**Upon successful completion of this module, students will be able to:**

|  |  |  |
| --- | --- | --- |
| **No.** | **Milos** | **Weighting (%)** |
| **1** | Explain the importance of risk and fraud analytics to organizations | **Refer to no.15** |
| **2** | Identify the steps involved in fraud detection and prevention |
| **3** | Explain the steps for data cleaning and exploration |
| **4** | Apply fraud detection and predictive models to trace fraudulent activities |
| **5** | Explain the importance of decision tree in fraud analytics |
| **6** | Explain the concept of enterprise risk management as an integrated approach to risk management |
| **7** | Understand the current approach to risk management |
| **8** | List the steps for enterprise risk management |
| **9** | Apply enterprise risk management process to risk analysis |  |
| **10** | Explain the roles of risk culture in fraud detection and prevention |  |

**Teaching and Learning Activities (TLAs)**

|  |  |  |  |
| --- | --- | --- | --- |
| **MILO No.** | **TLAs** | **Functions** | **Hours/Week** |
| 1,2,3,4,5,6,7,8,9,10 | Lectures and materials | Course instructors will introduce, with appropriate audio-visual materials, the concepts of risk and fraud analytics | **3hours** |
| 1,2,3,4,5,6,7,8,9,10 | Tutorials (Case study, Group Discussion, Quizzes, presentations, peer review, role play) | Tutorial sessions will introduce experiential forms of learning activities such as case studies, group discussion, presentations, peer review, quizzes and role play. Emphasis is placed on in-depth learning of the processes, methods, and techniques in risk and fraud analytics | **3 hours** |

1. **Assessments Tasks/Activities**

|  |  |  |  |
| --- | --- | --- | --- |
| **MILO No.** | **Type of assessment tasks/activities** | **Weighting**  **(if applicable)** | **Remarks** |
| 1,2,3,4,5,6,7,8 | **Examination**  Students are required to participate in a three-hour examination to test their knowledge on the subject matter | 50% |  |
| 1,2,3,4,5,6,7,8 | **Written Test/Quizzes**  1-hour written test/Pop Quizzes | 20% | Week 7/On Going basis |
| 1,2,3,4,5,6,7,8 | **Assignments**  Assessment is comprising group work assignment and individual assignment. | 30% | Case study analysis on Risk and Fraud Analytics |

1. **Attendance Requirements  
   Students are required to attend all lectures, tutorials and laboratory sessions.**
2. **Contribution to Programme Learning Outcomes**

|  |  |  |
| --- | --- | --- |
| **No** | **PILOs** | **MILO No** |
| **1** | Demonstrate understanding of risk fraud detection, prevention and control strategies to achieve organisational objectives. | **1,2** |
| **2** | Apply risks and fraud detection techniques to protect organisations against the risk of liquidation. | **2,3,4,5,6,7,8** |
| **3** | Demonstrate competence in working with large volume of data | **2,3,4,5,6,7,8** |
| **4** | Demonstrate some level of competence in modeling large data | **3** |
| **5** | Able to recognize and analyze bottle neck zones in organizations | **2** |
| **6** | Demonstrate independent and life-long learning skills | **1,2,3,4,5** |
| **7** | Demonstrate critical thinking skills. | **1,2,3,4,5** |
| **8** | Able to lead using the acquired knowledge of leadership skills | **1,2,3,4,5** |
| **9** | Demonstrate professional ethics and practices and moral responsibility towards the environment and the society | **1,2,3,4,5** |

1. **Grading of Student Achievement**

|  |  |  |  |
| --- | --- | --- | --- |
| **Letter Grade** | **% Mark** | **Grade Definitions** | **Remarks** |
| A | 70-100 | **Excellent** | Demonstrate excellent understanding of the subject matters. |
| B | 60-69 | **Good** | Demonstrate a good understanding of the subject matters, though missing some of the points. |
| C | 50-59 | **Adequate** | Demonstrate an adequate understanding of the core of the subject matters. |
| F | Below 50 | **Fail** | Demonstrate a poor understanding of the subject matter and can only recall limited content. |

1. **Resources**

**Suggested primary texts**

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| --- | --- | --- | --- | --- | --- | --- |
| **No** | **Name of Author(s)** | **Year of Publication** | **Title of Book** | **Edition** | **Publisher’s Name** | **ISBN** |
| **1** | Leonard, W. V. | **2017** | Fraud Data Analytics Methodology: The Fraud Scenario Approach to Uncovering Fraud in Core  Business Systems | **1st Edition** | John Wiley & Sons, Inc., | 9781119186793 |
| **2** | Bart, B. Véronique, V. V. & Wouter, V. | **2015** | Fraud Analytics Using Descriptive, Predictive, and Social Network Techniques A Guide to Data Science for Fraud Detection | **1st Edition** | John Wiley & Sons, Inc., | 978-1-119-13312-4 |
| **3** | Gregory, M. | **2008** | Enterprise Risk Management: A Methodology for Achieving Strategic Objectives | **2nd Edition** | John Wiley & Sons, Inc., | 978-0-470-37233-3 |

**Suggested secondary texts**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **No** | **Name of Author(s)** | **Year of Publication** | **Title of Book** | **Edition** | **Publisher’s Name** | **ISBN** |
| **1** | Leonard, W. V. | **2017** | Fraud Data Analytics Methodology: The Fraud Scenario Approach to Uncovering Fraud in Core  Business Systems | **1st Edition** | John Wiley & Sons, Inc., | 9781119186793 |
| **2** | Bart, B. Véronique, V. V. & Wouter, V. | **2015** | Fraud Analytics Using Descriptive, Predictive, and Social Network Techniques A Guide to Data Science for Fraud Detection | **1st Edition** | John Wiley & Sons, Inc., | 978-1-119-13312-4 |
| **3** | Delena D. S. | **2014** | Fraud Analytics Strategies and Methods for Detection and Prevention | **1st Edition** | John Wiley & Sons, Inc., | 978-1-118-23068-8 |
| **4** | George, C. &  Stephen S. | **2008** | The Analytics of Risk Model  Validation | **1st Edition** | Elsevier Ltd. | 978-0-7506-8158-2 |
| **5** | Yacov y. H. | **2009** | Risk modeling, Assessment, and Management | 3rd Edition | John Wiley & Sons, Inc., | 978-0-470-28237-3 |
| **6** | Gregory, M. | **2008** | Enterprise Risk Management: A Methodology for Achieving Strategic Objectives | **2nd Edition** | John Wiley & Sons, Inc., | 978-0-470-37233-3 |
| **7** | GARY COKINS | **2009** | Performance Management: Integrating Strategy Execution, Methodologies, Risk, and Analytics | **1st Edition** | John Wiley & Sons | 978-0-470-44998-1 |
| **8** | Hussein A. A. | **2014** | Computational Red Teaming  Risk Analytics of Big-Data-to-Decisions  Intelligent Systems | **1st Edition** | Springer Cham Heidelberg New York | 978-3-319-08280-6 |

**Suggested Journals**

1. A Review Statistical Science
2. International Journals of Finance and Accountancy
3. IEE Transactions on Cybernetics
4. The Journal of Enterprise Risk Management
5. International Journal of Innovative Technology and Exploring Engineering
6. International of Journal Technology Management
7. Accounting Horizons
8. Harvard Business Review
9. The Journal of Government Financial Management
10. Government Information Quarterly

**Facilities Requirements**

A lecture room with appropriate teaching and lab facilities