**Course Name :** Business Intelligence and Data Analytics.

**Semester :** Two

**Course Code :** ACC7212

**Course Category  :** Elective

**Credit Units :** 3

**Credit Hours** : 45

**Course Description**

Analytics is defined as the extensive use of data, statistical and quantitative analysis, explanatory and predictive models, and fact-based management to drive decisions and actions. Analytics is more than just analytical methodologies or techniques used in logical analysis. It is a process of transforming data into actions through analysis and insights in the context of organizational decision-making and problem-solving. Analytics includes a range of activities, including business intelligence, which is comprised of standard and ad hoc reports, queries and alerts; and quantitative methods, including statistical analysis, forecasting/ extrapolation, predictive modelling (such as data mining), optimization and simulation.

**Course Objectives**

**The objective of this course is to;**

1. Gain proficiency in using business intelligence tools and software for data visualization, reporting, and analysis.
2. To gain an understanding of how managers use business analytics to formulate and solve business problems and to support managerial decision-making.
3. To become familiar with the processes needed to develop, report, and analyze business data.
4. Possess professional skills for employment and lifelong learning in decision-making and management.
5. Learn how to apply data analytics techniques to financial data, including financial statements, stock prices, and economic indicators.

**Learning outcomes**

**By the end of the course, students will be able to;**

1. Identify, model and solve decision problems in different settings
2. Interpret results/solutions and identify appropriate courses of action for a given managerial situation, whether a problem or an opportunity
3. Discuss fundamental aspects of big data and data analytics from the CRISP (Cross Industry Standard Process for Data Mining) framework, data visualization and emerging issues.
4. Apply data analytics in preparation of financial statements, financial statements analysis and forecasting, carrying out sensitivity/scenario analysis and presenting financial data and metrics using dashboards.
5. Apply data analytics in financial management principles that include the time value of money analysis, evaluate capital projects, and carry out sensitivity/scenario analysis and present information using dash boards. - Apply data analytics in management

Course Contents

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| **S/NO** | **TOPICS** | **SUB TOPICS** | **Hours** |
| **1** | An Overview of Business Intelligence | 1. A Framework for Business Intelligence (BI). Intelligence Creation Use and BI Governance. Transaction Processing Versus Analytic Processing. Successful BI Implementation | 4 |
| **2** | Introduction to Data Mining | 1. Data Mining Process - Data mining tool XLMiner (Excel add-in – free 15-day trial available at www.solver.com/xlminer-data-mining) - Market Basket Analysis | 6 |
| **3** | Introduction to data analytics | 1. The CRISP (cross-industry standard process for data mining) framework for data analytics 2. Data concepts - conceptual, logical, and physical data models 3. Stages in data lifecycle: identifying data sources, modelling data requirements, obtaining data, recording data, using data for making business decisions, removing data 4. Definition of big data - Big Data Technologies - The 5Vs of big data - Types of data analytics: descriptive analytics, prescriptive analytics and predictive analytics 5. Analytics: The New Path to Value | 6 |
| **4** | Tools for data analytics | 1. Data cleaning tools (Alteryx, SSIS, Datastage, others) 2. Data Management (Storage/DBA): SQL, Oracle, Cloud Computing (AWS, AZURE), others 3. Reporting/Visualization: Excel, PowerBI, Tableau, Microstrategy, and others | 8 |
| **5** | Introduction to Decision Modeling | 1. Optimization Use of Excel to solve business problems: e.g. marketing mix, capital budgeting, portfolio optimization 2. Data visualization in Excel - Definition of data visualization - Benefits of data visualization - Types of visualization; comparison, composition and relationships - Qualities of good data visualization | 8 |
| **6** | Business Reporting Definitions and Concepts | 1. Data and Information Visualization. Different Types of Charts and Graphs. The Emergence of Data Visualization and Visual Analytics. Performance Dashboards. Business Performance Management. Performance Measurement. Balanced Scorecards. Six Sigma as a Performance Measurement System | 4 |
| **7** | Application of data analytics | 1. Financial accounting and reporting - Analyse financial statements using ratios, common size statements, trend and cross-sectional analysis, graphs and charts - Prepare forecast financial statements under specified assumptions - Carry out sensitivity analysis and scenario analysis on the forecast financial statements - Data visualization and dashboards for reporting. 2. Financial Management - Time value of money analysis for different types of cash flows - Loan amortization schedules - Project evaluation techniques using net present value - (NPV), internal rate of return (IRR) - Carry out sensitivity analysis and scenario analysis in project evaluation - Data visualization and dashboards | 5 |
| **8** | Emerging Trends and Future Impacts | 1. Cloud Computing and BI. Impacts of Analytics in Organizations: An Overview. Issues of Legality, Privacy, and Ethics. The Analytics Ecosystem | 4 |
|  | Total |  | **45** |

**Mode of Assessment**

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| **Mode** | **Score** |
| Course Work | **40%** |
| Final Examination | **60%** |
| Total | **100%** |

**Mode of delivery**

Face to face classes, Online classes, Group discussions, ODel Model, In- class Presentations, Buzz group, and Share experiences

**Reference materials.**

1. Business Intelligence: A Managerial Approach (2011) Turban, Sharda, Delen, King, Publisher: Prentice Hall, Edition: 2nd, ISBN: 13-978-0-136-
2. Business Intelligence Roadmap: The Complete Project Lifecycle for Decision-Support Applications by Larissa T. Moss References
3. The Visual Display of Quantitative Information by Edward R. Tufte
4. Business Intelligence: Making Better Decisions Faster by Elizabeth Vitt, Michael Luckevich, Stacia Misner
5. Business Intelligence Competency Centres: A Team Approach to Maximizing Competitive Advantage (Hardcover)by Gloria J. Miller
6. Liebowitz, J. (Ed.). (2013). Big data and business analytics. CRC press.