

M.SC. BUSINESS ANALYTICS – FINANCE

COURSE CODE: ACCT 6011

TITLE: Corporate Finance

CREDITS: 3

DESCRIPTION:

This course describes the corporation and its operating environment, the manner in which corporate boards and management evaluate investment opportunities, arrangements for financing such investments, and the development of financial risk management strategies. As such, the course provides students with an analytical framework for determining the intrinsic value of a corporation and to assess the effectiveness of corporate management in maximizing that value.

COURSE CODE: ACCT 6027

TITLE: Portfolio Management & Wealth Planning

CREDITS: 3

DESCRIPTION:

This course is intended to be closely aligned with the CFA topic area Portfolio Management and Wealth Planning, and as such, its content is synonymous to what is covered in the CFA syllabus. Specifically, it covers topics such as portfolio risk management, asset allocation, performance evaluation, modern portfolio theory, trading and portfolio construction. Throughout this course, students are expected to develop an understanding of the key theoretical underpinnings of portfolio management and wealth planning and be able to apply these concepts to current industry practice. This course is also intended to address new developments in portfolio management and wealth planning and hence will provide students with opportunities to discuss current, relevant topics in the field.

COURSE CODE: BUSA 6000

TITLE: Introduction to Business Analytics

CREDITS: 3

DESCRIPTION:

This course introduces students to the field of business analytics, an area of business administration that considers the extensive use of data, methods, and fact-based management to support and improve decision making. It presents the fundamentals needed to understand the emerging role and value of business analytics in corporate environments. Using real-world case studies, students will develop skills in analysing business situations, and learn to identify and evaluate opportunities in which business analytics can be used to support the decision-making process and improve performance. Topics to be covered are inclusive of: the evolution of business analytics, descriptive analytics, predictive analytics, and prescriptive analytics.

COURSE CODE: BUSA 6001

TITLE: Computer Simulation

CREDITS: 3

DESCRIPTION:

In this course, students will learn the fundamentals of computer simulation and how to build computer simulation models and use them to analyse management decision problems. They will be introduced to the theories and techniques of simulation. The main focus will be on discrete simulation events, although there will be some coverage of system dynamics. After completing this course, students will be able to develop a simulation model and run it using a simulation package or a spreadsheet.

COURSE CODE: BUSA 6002

TITLE: Data Preparation and Visualisation

CREDITS: 3

DESCRIPTION:

Data gathering is often a tedious and arduous job. Once gathered, it typically includes mistakes, omissions, and inconsistencies that can significantly distort the results of data analysis. As a result, data preparation is an inevitable and vital step that needs to be carried out before analysing any large dataset. The goal of this course therefore is to introduce students to different tools and techniques designed for collecting data and preparing them for further analysis. The course will cover: obtaining data from the web, APIs, and databases in various formats, detecting errors in large datasets, and the basics of data cleaning. Additionally, it will develop students' data presentation skills. In particular, students will gain hands-on experience with a variety of visualization tools and techniques designed for transforming the results of performed data mining into a more meaningful and insightful visual representation.

COURSE CODE: BUSA 6004

TITLE: Deep Learning

CREDITS: 3

DESCRIPTION:

This course examines the theoretical and practical deep learning techniques used in the analysis of large data sets. In this regard, students will not only be required to master deep learning theory, but also be able to apply in deep learning algorithms to real world problems. Students will practice all these ideas in Python and in TensorFlow. In addition, they will discuss case studies that involve Deep Learning for big data analytics. This course targets students who intend to pursue careers as data scientists work in the field of data analytics. Due to the data and technology intensive nature of the material, this course will be delivered primarily through face-to-face instruction and hands-on lab sessions. Finally, this class will culminate in an open-ended final project

COURSE CODE: BUSA 6005

TITLE: Database Design and Management

CREDITS: 3

DESCRIPTION:

This course introduces students to the major concepts, methodologies, tools and technologies that are required to analyse, design, develop and manage well-structured relational databases. In particular, students will also learn data modelling using entity-relationship diagrams. Furthermore, students will use database management systems (DBMS) to gain an appreciation of the concepts and practical applications of database management.

COURSE CODE: BUSA 6006

TITLE: Digital Analytics

CREDITS: 3

DESCRIPTION:

This course is designed to develop students' conceptual and practical understanding of how to utilize digital data to drive business success. Specifically, it will expose students to an array of the most current digital analytics tools and methods as well as to the technical information necessary to: obtain and analyse digital data, turn data into insights and communicate insights into actionable recommendations. Upon successful completion of this course, students will be equipped with the skills necessary to implement digital analytics in an organizational context in order to support and achieve both strategic and tactical business objectives.

COURSE CODE: BUSA 6007

TITLE: Data Mining: Supervised and Unsupervised Learning

CREDITS: 3

DESCRIPTION:

This course introduces students to the sophisticated methods and algorithms of supervised and unsupervised learning – two of the most important methodologies in data mining. It is designed to equip graduates with the knowledge and skills needed to understand, analyse, and derive insights from vast stores of digital information assets. Topics to be covered include: linear and logistic regression, support vector machines, neural networks, clustering, anomaly detection, dimensionality reduction, and recommender systems. At the end of the course students will not only possess an understanding of the fundamental concepts, principles, and techniques of supervised and unsupervised learning, but will also gain hands-on experience with major software tools and applications in the field and the practical know-how needed to effectively utilise the techniques learned to solve real-world data science problems.

DESCRIPTION

COURSE CODE: FINA 6004

TITLE: Financial Econometrics

CREDITS: 3

DESCRIPTION

Financial analysis utilizes econometrics and statistical methods to the problems encountered in financial markets and the financial industry in general. Financial institutions as well as regulatory agencies all use the tools of financial econometrics to make financial decisions, which involve the analysis of vast amounts of data on asset returns, volatilities, and other financial variables in both long and high frequency domains. The ability to analyse agent's behaviours and financial market reactions requires knowledge of time series properties as well as appropriate estimation methods. This course aims at extending students' knowledge in financial analysis and equip them with methods and techniques that allow them professionally to analyse financial aspects relevant to financial institutions, markets and industry.

COURSE CODE: FINA 6090

TITLE: Derivatives

CREDITS: 3

DESCRIPTION:

In this course the use of financial derivatives as a tool for risk management at both the firm and national levels will be examined. The content is, however, closely aligned with applications in the area of finance, with a particular emphasis on those issues of relevance to the Caribbean. The course examines the pricing and use of financial derivatives, the link of financial derivatives to the overall risk management strategy of the business.

COURSE CODE: LGSC 6003

TITLE: Operations Research I

CREDITS: 3

DESCRIPTION:

This course is concerned with the use of deterministic operations research models to solve decision problems. It introduces students to the operations research methodology and, through the use of simple cases, it illustrates how mathematical modelling can be used to improve decision making generally and, in particular, in logistics and supply chain management.

ONE (1) ELECTIVE FROM:

COURSE CODE: ACCT 6015

TITLE: Equity and Fixed Income Securities

CREDITS: 3

DESCRIPTION:

This course aims to build on the concepts introduced in the Corporate Finance course and develops advanced concepts and tools that are useful for investors, issuers, traders and hedgers. In the area of Equities, students will be exposed to various valuation methods, financial statement analysis, technical analysis and portfolio management. In terms of Fixed-income securities, students will be exposed to the basic analytics of fixed-income securities, forward rates, term structure theories, immunization and understanding the effects of various embedded options.

COURSE CODE: FINA 6002

TITLE: Financial Analysis and Modelling

CREDITS: 3

DESCRIPTION:

Financial Analysis and Modelling is designed develop an understanding of how businesses assess and forecast their financial performance. As such, the emphasis of this course is on the practical application of finance theory and on the provision of the knowledge, tools and techniques needed to implement various financial models. Some of the topics that will be covered include, but are not limited to, simple regression, multiple regression, VAR, ARCH and GARCH techniques and the techniques of determining the existence of unit roots. By the end of this course, students will be able to develop simple financial models that can be applied to analyse and solve financial problems.

COURSE CODE: FINA 6005

TITLE: Computational Finance

CREDITS: 3

DESCRIPTION:

Computational finance utilises mathematical, programming and statistical tools to solve problems encountered in finance. Financial institutions (e.g. investment banks, commercial banks and insurance companies) as well as regulatory agencies all utilise the tools of computational finance. Students will be introduced to the tools used in computational finance, which should help them to drive innovation and efficiency in their business or industry.

COURSE CODE: FINA 6100

TITLE: Advanced Financial Engineering

CREDITS: 3

DESCRIPTION:

Financial engineering utilizes mathematical and statistical methods to the problems encountered in finance. Financial institutions (e.g. investment banks, commercial banks and insurance companies) as well as regulatory agencies all utilize the tools of financial engineering. Students will be introduced to the tools used in financial engineering, which should help them to drive innovation and efficiency in their business or industry.

MANDATORY WORKSHOP

COURSE CODE: BUSA 6092

TITLE: Project and Consultancy Skills Workshop

CREDITS: Not-for-Credit

DESCRIPTION

This workshop is designed to prepare students for professional consulting work. During the workshop, students will learn about the nuances of consulting, ranging from: problem-identification, framing problems, analysing issues, and developing solutions. Additionally, students will develop their written and oral communications skills, as well as their presentation and stakeholder management skills. Altogether, students will develop proficiencies in a range of competencies that will enable them to successfully engage in consultancy work.