The courses for MSc (Business Intelligence and Analytics)

Code	*Course Name*	*Credit*
Core Courses (21 credits) (All are compulsory)		
MANB1113	Data Governance	3
MANB1123	Business Statistics for Data Science	3
MANB1133	Strategic Business Management	3
MANB1143	Business Intelligence	3
MANB1153	Data Mining and Business Analytics	3
MANB1163	Cloud Computing for Big Data Analytics	3
UANP0013	Research Methodology	3
Elective Courses (9 credits) (Choose 3 only)		
MANB2113	Data Visualization and Interactive Design	3
MANB2123	Advanced Enterprise Information Systems	3
MANB2133	Enterprise Architecture for Business Intelligence	3
MANB2143	Issues in Business Intelligence and Analytics	3
MANB2153	Machine Learning for Business Problems	3
MANB2163	Social Networks Analytics	3
University Course (3 credits) (Choose 1 only)		
UCCM 1263	IT Project Management	3
UANP 1063	Informatics in Society	3
Projects		
MANB2015	Project I	5
MANB2027	Project II	7
TOTAL CREDITS		**45**

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MANB1113	Data Governance	This course introduces the key concepts, principles and tools for Data Governance, Database Management, Data Security Management, Data Quality Management, Reference and Mater Data Management, Content Management, Meta Data Management, and Data Architecture, Analysis and Design. The aim is to *ensure that data is understandable, trusted, visible, accessible, optimized for use, and interoperable.* At the end of this course students can develop and execute plans, policies, programs that control, protect and enhance the value of data and information assets.	35%
MANB1123	Business Statistics for Data Science	This course introduces students to a range of statistical techniques which managers use. The students will apply these techniques to relatively simple practical examples. The students will learn to use R to perform any of the calculations associated with these statistical techniques. This course will begin with a brief overview of the discipline of statistics and will then quickly focus on descriptive statistics, introducing graphical methods of describing data. The students will learn about combinatorial probability and random distributions, the latter of which serves as the foundation for statistical inference. We will also examine the techniques to study the relationship between two or more variables; this is known as regression. The focus in this subject is on how to analyze and interpret results or the output from R. The students will learn how to apply these techniques by working with examples which are relevant to most major business disciplines and the functional areas of large organizations. These include examples from Accounting (particularly Auditing), Economics, Finance, Financial Planning, Human Resource Management, Information Technology, Logistics and Transport and Marketing. At the end of the course students will have advanced the knowledge and skills to collect, organize, analyze, and interpret business statistical output.	30%
MANB1133	Strategic Business Management	This course introduces the key concepts, tools, and principles of business strategy formulation and competitive analysis for managerial decisions and actions that affect the performance and survival of business enterprises. The course assumes a broad view of the environment that includes buyers, suppliers, competitors, technology, economy, government, and global forces and views the external environment as dynamic and characterized by uncertainty. The course takes a general management perspective, viewing the firm as a whole, and examining how policies in each functional area are integrated into an overall competitive strategy. At the end of this course students are able to formulate business strategy and perform competitive analysis for management decisions.	30%
MANB1143	Business Intelligence	This course introduces students the concepts, practices, systems and technologies of business intelligence, which supports enterprise level data management, analysis, reporting, and decision making. The students are exposed to the current Business Intelligent tools, are expected to apply Business Intelligent tools to solve case study.	No Exam
MANB1153	Data Mining and Business Analytics	This course is about data mining and business analytics, the computational paradigm to find pattern and regularities in databases, perform prediction and forecasting, and generally improve their performance through the interaction with data. Business analytics allows to discover, analyze and act on data in business domain. It is about learning from the past to uncover trends and predict likely outcomes. Moreover, in data mining analytics it gives a framework to analyze data over time, leading to more refined outcomes and corrective actions. This course will cover the issues related to the key element of general process of Knowledge Discovery and predictive analytics that deals with extracting useful knowledge from raw data. The process includes data selection, cleaning, coding, using different statistical and machine learning techniques and visualization of the generated structures. This course will also cover the techniques and topics that are widely used in real-world data mining projects including classification, clustering, feature selection and etc. At the end of this course, students are able to understand the principles of data mining and the business analytics and obtaining hands-on experience of implementing data mining projects and therefore	30%

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		will greatly improve the competitiveness of students in business intelligence and analytics career as well as enhance their research skills.	
MANB1163	Cloud Computing for Big Data Analytics	Cloud computing is a model for enabling ubiquitous, convenient, on-demand access to a shared pool of configurable computing resources. Cloud computing and storage solutions provide users and enterprises with various capabilities to store and process their data in third-party data centres. At the foundation of cloud computing is the broader concept of converged infrastructure and shared services. In this course, the students will be exposed to the concept of Cloud Computing, it principles and applications. A variety of real case studies and existing market cloud-based tools will be studied in order to provide students with a close overview to Cloud Computing applications to solve Big Data analytics and Data Science problems.	No Exam
UANP0013	Research Methodology	This course discusses the fundamentals of research methodology which include a general introduction to postgraduate research, its methodologies and organization. It is designed to support postgraduate students in developing their research proposal and to guide students through a range of issues and considerations which should inform their general approach to research. Students will learn a range of research tools, and will be equipped to plan and organize their research, as well as to communicate their findings.	No Exam
MANB 1085	Project I	Each student will implement his/her own project based on knowledge and skills obtained in previous courses. Student will be guided during the Research Methodology topic provided in this project. Although Project 1 and Project 2 make a set, these are assessed and presented separately at the end of the semester. A complete report must be written and adhere to the UTM Thesis Writing Guideline.	No Exam
MANB 2087	Project II	Each student will implement his/her own project based on knowledge and skills obtained in previous courses. Student will be guided during the Research Methodology topic provided in this project. Although Project 1 and Project 2 make a set, these are assessed and presented separately at the end of the semester. A complete report must be written and adhere to the UTM Thesis Writing Guideline.	No Exam
UANP1063	Informatics in Society	This course aims to provide students with an understanding on informatics which involves both social and technical aspects that associated with technology, people and society. Basic topics on information-related such as classic themes of informatics, knowledge representation, problem analysis and problem solving will be explored. Research and applications related to emerging trends in informatics will be discussed. This course also exposes students to social and ethical issues in the various fields of informatics	No Exam
MANB2113	Data Visualization and Interactive Design	This course is designed to provide students with the foundations necessary for understanding and extending the current state of the art in data visualization and interactive design. At the end of this course, students are able to understand the key techniques and theory used in visualization, including data models, graphical perception and techniques for visual encoding and interaction, build and evaluate visualization systems, and create a project to engage in independent and lifelong learning to read and discuss research papers from the visualization literature.	No Exam

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MANB2123	Advanced Enterprise Information Systems	This course covers the different types of enterprise systems, how they are used to manage an organization's processes, re-engineering the business with enterprise systems. It focuses on methods used by information systems practitioners to meet the information needs of enterprises, issues surrounding the development and deployment of enterprise information system in large business settings. Factors for successful implementation, management and maintenance of such systems are also addressed. Special emphasis will be placed on the relationships of business strategy and the strategic role of enterprise information system. Enterprise IT alignment will also be discussed to achieve organizational competitive advantage. Topics include EBPA (Enterprise Business Process Analysis), ERP (Enterprise Resource Planning), SCM (Supply Chain Management), CRM (Customer Relationship Management), Enterprise Applications Integration. This course will help students develop problem-solving skills in practical situations related to enterprise process and data modelling.	30%
MANB2133	Enterprise Architecture for Business Intelligence	This course provides students in-depth knowledge on existing policies, standards, and procedures that support the management of information for effective enterprise change. Technology and content to be covered involves concept of information which is used and applied to activities that require explicit details of information technologies (IT). This includes IT service delivery and support and IT implementation. In addition, this course focuses on the three enterprise architecture methodologies ie. Zachman Framework, TOGAF and Federal Enterprise Architecture (FEA). At the end of this course students are able to articulate critically the various EA in aligning business strategies with technology capabilities while translating IT contribution to organization revenue.	No Exam
MANB2143	Issues in Business Intelligence and Analytics	This course provides opportunities for students to develop areas of interest by identifying current research related to Business Intelligence, Business Analytics and Data Science. Students will present their research interests to the class or the instructor (lecturer) will invite practitioner or expertise either from industry or university to share the knowledge and experience on the latest issues on above mentioned area. The course is designed for individuals with all levels of experience to develop their research skills. The skills developed through the participation of this seminar are directly transferable and can be applied in variety of contexts and work environments. At the end of the course, students will be able to develop a concept paper of their research area of interest. Moreover, students will also have an up to date issues on Business Intelligence, Business Analytics and Data Science based on the sharing session conducted.	No Exam
MANB2153	Machine Learning for Business Problems	This course covers the key elements of computational intelligence and how the computational intelligence fits into the larger picture comprising machine intelligence (the machine learning) and biological intelligence. The course will cover the issues related to the basic knowledge about the key algorithms and theory that form the foundation of machine learning and computational intelligence. Starting with addressing the question on how to enable computers to learn from past experiences, next, it introduces the field of machine learning describing a variety of learning paradigms, algorithms, theoretical results and applications covered the computational intelligence for instance reinforcement learning, instance based learning, bio inspired learning and etc. At the end of this course, students are able to understanding the principles of machine learning and the computational intelligence including its advantages, limitations and possible applications. From that, students will be able to identify and apply the appropriate machine learning and computational intelligence techniques to solve classification, pattern recognition, optimizations and decision in Business problems.	No Exam

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MANB2163	Social Networks Analytics	Social Network Analytics refer to the process of analyzing unstructured data from documented sources including open-ended surveys, media social, blogs and other types of web dialog. It focuses on the necessary preprocessing step and most successful methods for automatic text classification, including Naïve Bayes, Support Vector machines (SVM) and text clustering. At the end of the course, students will be able to identify techniques for processing unstructured data and transform it into a structured format. In addition, student will be able to conduct web and text analytic by apply different statistical text processing methods on recent task like sentiment analysis.	No Exam