ANALYTICS (BNA)

BNA 2003 Principles of Business Analytics (3-1-3)
This course will introduce students to the decision-making tools and activities carried out by managers using data-driven applications on a daily basis. The course exposes students to the basic functionality of the mainstream Spreadsheet and Data driven software applications (such as MS Excel and MS Access). Students will work to develop knowledge and understanding of the functionality of the software. They will apply those skills in solving basic problems and make decision using the software tools.

BNA 2103 Business System Analysis (3-1-3)
Traditional systems development life cycle (SDLC) and alternative methodologies are reviewed. Focus is on planning, specification of structured requirements, methods, techniques, and tools used to determine information requirements, and documentation. Systems design methods and implementation issues are also introduced.

BNA 3003 Systems Design (2-2-3)
Introduces business application development and covers fundamentals of object-oriented program development using top-down design; structured programming; debugging, testing and implementation; and elementary data structures. An Object oriented programming language is used as the software tool to learn about the fundamentals of object oriented programming for business applications with link to a front end.
Prerequisites: ICT 2013

BNA 3103 Business Intelligence and Knowledge Management (3-1-3)
Focuses on knowledge and value building for the organisation using business intelligence and analytics. As an introductory course it covers a broad range of technologies, applications, and processes for gathering, storing, accessing, and analysing data to help users make new analytical models outside traditional frameworks. Specifically, it covers, knowledge fundamentals and management, business performance management, new models generation as support for decisions and value creation, and others. Hands-on experience is provided through projects that use several technologies and software.
Prerequisites: STS 2003

BNA 3133 Database Design and Implementation (3-1-3)
Provides a foundation of knowledge needed to work with database management systems and create applications utilizing current development strategies. Examine various types of database techniques with emphasis on relational designs. Design and implement solutions to business-related problems. Facilitates an in-depth study of database design to underpin decision support systems and related knowledge-based technologies. Additional focus is on organizational decision-making and its data, information, and knowledge-based support systems.
Prerequisites: BNA 2103 or BIS 3003

BNA 4023 Big-Data and Advanced Data Mining (3-1-3)
Develop an understanding and skill set towards the handling of big data, data mining and its analysis to infer insights from data pre-processing, clustering, classification, regression, visualisation, feature selection for descriptive and predictive analysis through the use of contemporary software and tools that extend to machine learning for artificial intelligence.
Prerequisites: BNA 3133

BNA 4033 Data Visualisation Techniques and Tools (3-1-3)
Covers advanced techniques for communicating complex business analytics information, as a key element of modern data engineering. Visual, perceptive and cognitive issues relating to the use of data visualisation systems is discussed. Additionally, the influence of visualisation channel and messaging properties such as entropy, information rate and channel capacity is investigated. Frameworks for optimal selection and structured design of visualisation pipeline elements are treated, as well as the design aspects of visualisation schemes for supporting high-end business analytics.
Prerequisites: BNA 2103 or BIS 3003

BNA 4103 Advanced Business Analytics (3-1-3)
Advances students' understanding of how manage and analyse business data to gain competitive advantage. Focus is on expanding student learning to ensure expansion of student experience to cover: i) a wider breadth of analytical software packages ii) the interpretation of outputs, and iii) resulting improvements in decision-making. It includes case studies, projects, and real-world business problems to present students with opportunities to apply business analytics skills and to use business analytics software applications.
Prerequisites: BNA 2103

BNA 4113 Applied Data Analytics and Reporting (3-1-3)
Provides an in-depth understanding of contemporary data analytics tools and systems used to measure, analyse and report digital and non-digital business performance. Topics include a range of open-source and proprietary analytic tools used in business analytics. Additionally, strategic issues pertaining to the use of high-end data analytics for assessing multiple business functions (HR, Marketing, Small Business Management, etc.) is examined, coupled with frameworks for structured deployment of data analytics solutions, and business performance reporting.
Prerequisites: STS 2003, MRK 1103

BNA 4123 Ethics and Security in Analytics (3-1-3)
Provides an in-depth understanding of diverse topics related to Security, Privacy and Ethics in business analytics. The key tools and frameworks available to analysts to examine security infrastructure in a business analytics project and identify the potential ethical issues that may arise. It also includes a range of functions and measures the analyst needs to ensure the security and privacy of proprietary data and the measures necessary for de-identification and privacy safeguards. In addition, strategic issues and concerns pertaining to analytic solutions and data sources are examined
Prerequisites: MGT 3003

BNA 4133 ERP Systems (3-1-3)
Develop a sophisticated understanding of the concept of ERP systems. The course illustrates how business processes interact in an ERP system in areas of: Procurement, Materials Management, Production Planning and Execution, Goods Movement, Sales Order Management, Financial Accounting, HCM and Controlling, and Enterprise Asset Management. The course Develops in-depth theoretical and practical knowledge regarding ERP systems through exercises and case studies.
Prerequisites: BIS 3003

BNA 4203 Business Analytics Research Project (3-1-3)
Demonstrating mastery of the program learning outcomes, this capstone
final semester course requires the application of in-depth knowledge
and research skills gained across the Business Analytics Program to
be evidenced in the industry-based project and report. The purpose is
to integrate previously taught stand-alone courses in order to identify
opportunities for the application and critical review of theory and practice
in a business environment.
Prerequisites: STS 3113