NUS ACE YOUTH PROGRAMME

AI-POWERED BUSINESS ANALYTICS (INTERMEDIATE)

Programme Overview

What is Business Analytics and why is it important in leading companies, enterprises and organisations?

Analytics is reshaping industry competition and organizations' core businesses at an accelerating pace. In McKinsey Global Survey 2017, respondents say that the changes data and analytics have brought to their industries are growing in both magnitude and scope. Across industries, the use of analytics is increasingly changing the nature of competition in the industries significantly.

Transformational uses of analytics have been applied across major industries from education, entertainment and hospitality, financial services, health care, retail, supply chain, transportation, manufacturing and information technology sectors. These approaches have had a direct impact on the business outcomes.Analytics plays a crucial role across industries and within the organisations. From identifying business opportunities, gaining deeper insights, making data-driven decisions, ensuring adoption, and growing capabilities, analytics plays a vital role in impactful business outcomes. Understanding the strengths (and limitations) of Analytics empowers the next generation of IT and business professionals to maximize the use of Analytics and ensure the best outcomes for the organisations they work in.AI in conjunction with business analytics, forms a powerful synergy that transforms industries and organizations. It's not just about analyzing data anymore; it's about leveraging intelligent systems to derive actionable insights and automate decision-making processes.Incorporating AI into analytics empowers organizations to not only understand past and present scenarios but also to proactively shape the future. It's about leveraging technology to transform data into actionable intelligence that drives innovation, efficiency, and competitiveness across various industries and sectors.

Learning Objectives

- Understand the fundamentals of Business Analytics, including its purpose, key concepts, and basic principles.

- Recognize the role of Artificial Intelligence in enhancing Business Analytics, with an overview of how AI powers analytical processes.

- Gain insights into real-world applications of Business Analytics across major business domains and industries.

- Learn a structured approach to adopting Business Analytics within an organization to support data-driven decision-making.

- Develop an exploratory data analysis (EDA) dashboard to effectively communicate insights and findings to stakeholders.

How they benefit

With an understanding of Business Analytics and its application, participants will have the basic skills and knowledge to allow them to identify opportunities in the companies and organisations through Analytics. This course will also provide participants with a solid foundation to allow them to further develop their business analytics skillset over the course of their training and careers.

Pre-requisites

This course is targeted towards those who intend to follow a career in Analytics and other related courses. There are no prerequisites for this course. The course will be delivered in English.

Software Installation

Please ensure you have a version of

1) Microsoft Excel with Pivot Charts add-ins.
2) Power BI desktop version on a **Windows System.** Mac books are **not** recommended.
3) Orange desktop app.

Programme Content

Day 1	Introduction to Business Analytics and Data Fundamentals
	o Introduction to Business Analytics
	o Overview of Analytics History: Analytics 1.0 to3.0
	o Industry Competition and Changes
	o Analytics' role in business
	o Business Discovery and problem objectives
	o Introduction to Software Tools for Analytics
	o Data Profiling and Preparation with Power BI
Day 2	Exploring Practical Business Analytics and Data Frameworks
	o What is Descriptive Analytics?
	o Measures of Location
	o Measures of Dispersion
	o Measures of Shape
	o Measures of Association
	o Exploratory Data Analysis concepts
	o Data and Analytics Framework
	o Practical applications of analytics
	o Data Exploration with Power BI and Dashboarding
Day 3	AI, Machine Learning, and Time Series Analysis in Business Analytics
	o Understanding AI and Machine Learning
	o Applications of AI and ML in business analytics
	o AI/ML implementation using Orange

	o Example 1: Unsupervised Learning o Example 2: Supervised Learning o Time Series Data Techniques
Day 4	Navigating Big Data Analytics and Case Studies o Introduction to handling Big Data o Tools and techniques for managing large datasets o Case studies on real-world Big Data challenges o Big Data Analytics
Day 5	Final Project Presentation by Teams o Wrap up and Team feedback session

Schedule

Day 1	Day 2	Day 3	Day 4	Day 5
3 hours	3 hours	3 hours	3 hours	3 hours
Business Analytics and Data Fundamentals	Practical Business Analytics and Data Frameworks	AI, Machine Learning, and Time Series Analysis in Business Analytics	Big Data Analytics and Case Studies	Final Project Presentation

Assignment Requirement and Evaluation Criteria

Continuous Assessment: 50%

• Continuous Assessment MCQ Quiz 1 (10%)

• Continuous Assessment MCQ Quiz 2 (10%)

• Continuous Assessment MCQ Quiz 3 (10%)

• End Term Assessment MCQ Quiz 4 (20%)

Final Assessment: 50%

• Group Verbal presentation of project

Total: 100%