BSc BUSINESS ANALYTICS

What is Business Analytics?

Business Analytics is the use of different techniques and tools to provide business managers with critical data-driven insights of the operational and performance characteristics of the business.

Using techniques like data mining, text mining and web mining, business analytics professionals act like data detectives, analysing data to discover patterns and relationships among data so as to better understand an organisation’s current and past situations, predict future outcomes and act effectively.

The Growing Application of Business Analytics in Business

When you walk into supermarkets, have you ever wondered why some of them place eggs next to bread? When you receive product brochures from your credit card issuers, have you ever stopped to ponder how they know what you want or need? When you browse through books at your favourite Internet book-site, have you marvelled at the ability of the book-site to recommend books of specific genres and topics that you are interested in?

In today’s Big Data era, businesses increasingly rely on the right information to run, improve their performance and know what their customers need. Social media like Twitter, Facebook, call centre logs, click streams, customer feedback, quantitative and qualitative surveys, email communications and sales transaction records are just some of the readily available data sources that provide businesses with the ability to better understand and predict customer needs. However, raw data themselves have no meaning to businesses. It is the ability to turn data into relevant information and then to piece together bits of relevant information to form useful knowledge that allows businesses to serve the customers more effectively and organisations to run their operations more efficiently.

Given the abundance of data sources, how can we extract the right information from data sources and turn the information into useful knowledge to run businesses, improve performance, predict outcomes and understand customers?

Innovating Business Practices with the Use of Business Analytics

Supermarket managers can use business analytics to analyse customer transaction records at check-out counters to identify customers’ purchasing patterns. Likewise, credit card issuers routinely use business analytics to analyse customer transaction records to have a better understanding of customer needs. Increasingly, companies are using text mining to monitor the chatter on social media like Twitter or Facebook to uncover sentiments on their products and services.

Message from the Dean

“The School of Business at Singapore University of Social Sciences (formerly known as SIM University) aims to nurture business and management professionals who can communicate well, resolve intricate business issues effectively, and manage complexities efficiently in today’s highly competitive and dynamic business environment. We will prepare our students to become knowledgeable professionals who are ready to manage and lead. We strive to give our students a valuable learning experience by providing them with experienced and inspiring teaching faculty complemented with a supportive and flexible learning environment. Leveraging on our strong industry links and business networking, we aim to bring the business world to our business school through case studies, work-based assessments, and guest speaker seminars. We will also bring the business school to the business world through industry site visits and overseas study trips.

We provide a pathway for students to obtain a quality university education and the relevant foundation to achieve their desired career goals.”

Associate Professor Lee Pui Mun
Dean, School of Business
Singapore University of Social Sciences

The Need for Business Graduates with Business Analytics Skill Set

Singapore is fast developing into a broad-based service economy. Both service and manufacturing economies thrive on the availability of information and knowledge, but the service economy probably needs it more. Services sectors such as finance, banking, insurance, retail, entertainment and others together handle millions of customer transactions every day. Increasingly, to manage these service organisations effectively, top management relies on accurate data. They rely on managers and skilled knowledge employees to prepare and analyse data as well as to put up suggestions for driving all aspects of daily operations and also long-term strategic positioning. In industry and the professional community, such activities are grouped under the term Business Analytics or Business Intelligence.
The combined effect of the explosive growth in data and the lack of business analytics skill set in current employees sees the growing need for graduates who are skilled in the fundamentals of business analytics, and who are able to understand and speak the language of business. The need for business analytics graduates who are able to perform effective data analysis and at the same time are knowledgeable in the business domain, is pressing. As job roles become more complex because of increasing customer sophistication and intense competition, organisations are increasingly looking for graduates who are conversant in the language of business as well as in the application of business analytics techniques.

**Programme Objective**

The Business Analytics degree programme at the School of Business, Singapore University of Social Sciences, provides students with a skill set that is relevant to all organisations operating in the information and knowledge management era. The objective of this degree programme is to nurture and educate students to acquire a business analytics skill set that will allow them to understand the management of a business entity and have the ability to apply appropriate business analytics techniques so that business data can be transformed into value-added information or business intelligence. The goal is to prepare business analytics graduates to apply their acquired knowledge to help organisations to improve their performance, understand and serve their customers better, strengthen their partnerships with major stakeholders, and identify areas for improvement in the organisations' processes.

The programme helps students to acquire these learning outcomes through a well-structured curriculum that cultivates in them the two core knowledge fields of fundamental business management and business analytics. The curriculum is designed to first equip graduates with fundamental business knowledge such as management, accounting, marketing, operations, and IT management, followed by a set of business analytics courses. Armed with fundamental business knowledge and relevant business analytics skills, graduates will be able to perform the entire spectrum of activities needed for

**CURRICULUM**

Students are required to complete a total of 130 credit units (cu) to graduate with a basic degree, inclusive of 10 cu of university core courses. All courses are 5 cu unless stated otherwise. This programme has an honours option. Students who achieve a CGPA of 3.5 and above upon completion of their basic degree may be invited to enrol in the Honours programme. Students who accept the invitation will need to complete another 40 cu of courses to achieve 170 cu in total and have to satisfy all university requirements in order to graduate with honours.

**Business Compulsory Courses (40 cu)**

- **Level 1**
  - Management
  - Quantitative Methods
  - Statistics

- **Level 2**
  - Contract and Agency Law
  - Managerial Economics
  - Financial Accounting
  - Financial Management
  - Marketing Management

**Business Analytics Compulsory Courses (55 cu)**

- **Level 2**
  - Data Visualisation for Business

- **Level 3**
  - Selected Topics in Regression
  - Fundamentals of Data Mining
  - Association and Clustering
  - Predictive Modelling
  - Business Analytics Applications
  - Selected Topics in Business Analytics
  - Business Forecasting
  - Introduction to Big Data

**Business Analytics Elective Courses (25 cu)**

- **Level 1**
  - Organisational Behavior

- **Level 3**
  - Independent Study
  - IT-Enabled Business Transformation
  - Operations Management
  - Project Management
  - Starting and Managing a Business
  - Multivariate Analysis
  - Marketing Research
  - Database Systems - Modelling
  - SAS Programming and Its Application

**Honours Compulsory Courses (30 cu)**

- Financial Accounting Frameworks (2.5 cu)
- Managing Finance in an Organisation (2.5 cu)
- Managing Sustainable Operations
- Managing and Leading to Achieve Organisational Excellence
- Corporate Governance, Social Responsibility and Enterprise Risk Management
- Strategy (10 cu)

**Honours Elective Courses (10 cu)**

Students may read any 10 cu from an Elective Basket comprising Level 3 courses or higher level courses other than courses already completed in their basic undergraduate degrees.

Explanatory Note:

1 Up to two of the above courses can be replaced by two General Electives, which are courses offered under the General Studies Programme (course pre-requisites apply)

For more information on our BSc Business Analytics, please visit suss.edu.sg/BSBA
What do Business Analytics Graduates Work as and Where do They Work in?

The BSc Business Analytics programme is suitable for qualified applicants who aspire to work in the services, manufacturing and government sectors and in areas such as business analysis, business development, customer relationship management, supply chain management, marketing research, business and management consulting, and operations management.

There are many organisations that will employ our graduates. These organisations are business analytics vendors and system integrators, consulting and marketing research firms and end-users of business analytics across the private and public sectors. The following are the job roles and organisations that have employed our graduates:

<table>
<thead>
<tr>
<th>Job Role</th>
<th>Company</th>
<th>Type of Organisations</th>
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</thead>
<tbody>
<tr>
<td>Analytics Consultant, Business Analytics and Optimisation</td>
<td>IBM</td>
<td>Business Analytics vendors and system integrators</td>
</tr>
<tr>
<td>Technical Analyst</td>
<td>NTT Data Business Solutions</td>
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<tr>
<td>Associate Analytics Consultant</td>
<td>SAS Singapore</td>
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<tr>
<td>Senior Systems Engineer, Analytics</td>
<td>Silicon Valley</td>
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<tr>
<td>Analytics Consultant</td>
<td>Sift Analytics Group - formerly SPSS BI</td>
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<tr>
<td>Trainer-Consultant (Analytics)</td>
<td>Acorn Marketing &amp; Research</td>
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<tr>
<td>Research Analyst</td>
<td>Aimia – formerly Carlson Marketing</td>
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<tr>
<td>Decision Science Consultant</td>
<td>Deloitte Analytics</td>
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<tr>
<td>Senior Associate</td>
<td>The Nielsen Company</td>
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<tr>
<td>Client Solution Executive</td>
<td>Ministry of Social and Family Developments</td>
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<tr>
<td>Data Management Executive</td>
<td>MND</td>
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<tr>
<td>Assistant Executive, Quality Service</td>
<td>MOM</td>
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<tr>
<td>Manager, Business Compliance</td>
<td>NUS</td>
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<td>Manager, Customer Operations</td>
<td>Pioneer Generation Office</td>
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<tr>
<td>Research Assistant</td>
<td>SGH</td>
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<tr>
<td>Senior Manager, Data Analytics</td>
<td>Carlson Hotels, Asia Pacific</td>
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<tr>
<td>Quality Executive</td>
<td>Corning</td>
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<tr>
<td>Executive, Transport Planning (Data Mining)</td>
<td>SMRT</td>
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<td>Passenger Service Performance Analyst</td>
<td>DBS Bank</td>
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<tr>
<td>Senior Executive, Data Miner</td>
<td>Millenium &amp; Copthorne</td>
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<tr>
<td>Manager, Management Information Unit</td>
<td>NCS Group</td>
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<tr>
<td>Data Analyst</td>
<td>OCBC Bank</td>
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<tr>
<td>Value Optimization Manager</td>
<td>Reebonz</td>
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<tr>
<td>Analyst, Business Analytics - Consumer Banking</td>
<td>Singtel</td>
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<tr>
<td>Analytics Project Manager</td>
<td>SONY</td>
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<tr>
<td>Business Reporting and Analytics Manager</td>
<td>Thomson-Reuters</td>
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<tr>
<td>Data Analyst</td>
<td>Wunderman Singapore</td>
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<tr>
<td>Lecturer &amp; Course Co-ordinator, Business Intelligence &amp; Analytics</td>
<td>Temasek Polytechnic</td>
<td>Business Analytics training - IHL</td>
</tr>
</tbody>
</table>

Articulation to Postgraduate programmes

Below is a list of postgraduate programme where some of our graduates have articulated to:

<table>
<thead>
<tr>
<th>S/No</th>
<th>Programme</th>
<th>Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Master of Science (Knowledge Management)</td>
<td>NTU</td>
</tr>
<tr>
<td>2</td>
<td>Master of IT in Business (Service Sector Analytics)</td>
<td>SMU</td>
</tr>
</tbody>
</table>
“The instructors in the Business Analytics programme are mainly business analytics Practitioners who are willing to share their valuable experience in the classroom. This helps us to learn better, especially in the application of business analytics in the different industries.” (2012)

Ms. Yeo Hwee Theng
Associate Consultant

“Graduating from Singapore University of Social Sciences with a Business Analytics degree (BSBA) was indeed a professional upgrade for both my personal knowledge and career pursuit. Stemming from an engineering background, although equipped with a very logical working mind, it was never enough for the business world. I moved fully into the Sales & Marketing Industry right after my graduation from Singapore University of Social Sciences. Now, I can be logical and analytical towards my going about with my sales driven career. My training enables me to better appreciate the mechanics of business and importance of data analysis. The training in Singapore University of Social Sciences is

Mr. Micky Gan
Business Development Manager

“Graduating from Singapore University of Social Sciences with a Business Analytics degree (BSBA) has added much value to my professional life. The courses were very interesting and the lecturers were highly qualified. The innovative approach in solving business problems using analytical solutions and the numerous presentations I had to make during my studies, have prepared me well for my current job as an analytics consultant in a renowned organization. Thanks to the high quality of the analytics courses and career advice given by my analytics instructors.”

Mr. Willian Chia
Consultant
Admissions

You must be a Singapore citizen, permanent resident or a resident in Singapore. In addition, you will need to meet these minimum requirements:

• GCE ‘A’ level with two passes (prior to 2006) or two H2 passes (from 2006), or local Polytechnic Diploma or International Baccalaureate (IB) Diploma or NUS High School Diploma. Applicants with an acceptable SAT1 score may be considered for admission on a case-by-case basis;
• Two years of full-time work experience, or currently employed on a full-time basis; and
• At least 21 years old.

In addition to the standard admission criteria, applicants need to have:
• at least Grade B4 in GCE ‘O’ level Mathematics
• a Pass in GCE ‘O’ level Additional Mathematics, or
• a Pass in GCE ‘H1’ level Mathematics or Statistics, or
• a Pass in GCE ‘A’ level Mathematics.

Mathematics and statistics courses taken at the diploma level will be considered if applicants do not meet the above minimum criteria.

Shortlisted candidates may be required to undergo one or more interview(s) and/or take written admission or other evaluation tests.

All applications are considered individually on merit, and the offer of admission depends on the number of places available. Admission is solely at the discretion of Singapore University of Social Sciences.

How to Apply

Applications are to be made online via suss.edu.sg. You must submit all the required documents together with your admission application. Incomplete applications will not be considered.

Tuition Fees and Government Subsidy

The amount of course fee you pay in each semester depends on the number of courses you take in that semester. Course fees cover all study materials, classes, supervision, assignments and examinations. They do not include costs for textbooks and other additional items specified by the university from time to time.

Students may be eligible for a government subsidy of up to 55% of the course fee. In addition, Singapore Citizens (SC) aged 40 and above who are pursuing MOE-subsidised undergraduate programmes with Singapore University of Social Sciences and who are eligible for the SkillsFuture Mid-Career Enhanced Subsidy will pay tuition fees that are 60% lower than the standard subsidised fees payable by other SC students who are below 40 years old.

All Singaporeans aged 25 and above can use their $500 SkillsFuture Credit from the government to pay for a wide range of approved skills-related courses. Visit the SkillsFuture Credit website (www.skillsfuture.sg/credit) to choose from the courses available on the SkillsFuture Credit course directory.

Please visit suss.edu.sg for current tuition fees and eligibility criteria for the government subsidy and SkillsFuture Mid-Career Enhanced Subsidy.

Internet Access

All Singapore University of Social Sciences’ students must have access to a computer or laptop and the Internet in order to use the electronic and website facilities, which allow access to course, academic or administrative information.

Contact Details

Singapore University of Social Sciences
461 Clementi Road
Singapore 599491

Telephone: (65) 6248 9777
Fax: (65) 6763 9077
Email: student_recruitment@suss.edu.sg