BUSINESS INFORMATION SYSTEMS

Our Business Information Systems programmes develop professionals who understand business challenges, and conceive and manage solutions which are increasingly ICT-dependent. By examining issues such as security, privacy and ethics in information systems, you will enhance your understanding of society's use of information systems.

All of our Masters teaching is informed by links to industry and is supported by research conducted by in-house research teams active in the areas such as Data and Knowledge Management, Health and Social Care Modelling, Computational Intelligence, Parallel Computing, Distributed and Intelligent Systems, Semantic Computing, and Computer Vision and Imaging.

Our programmes are accredited by the BCS – The Chartered Institute for IT as fully meeting the requirements for Chartered IT Professional (CITP) Further Learning and partially meeting the requirements for Chartered Engineer (CEng).

All of our courses are accredited by **BCS – The Chartered Institute for IT**

BIG DATA TECHNOLOGIES MSc

Recent technological advances decreasing hardware costs and the 'Internet of things' have led to a rapid explosion in the amount of data generated in a variety of domains, including data-driven science, telecommunications, social media, large-scale e-commerce, medical records and e-health. Big data refers to the ability to exploit the massive amounts of extremely heterogeneous data that are being routinely generated at an unprecedented rate from an ever-expanding variety of sources.

Business and industry used their big data to extract a better understanding of customers' needs and behaviour, to develop targeted new products and to cut operational costs. The competitive advantages and productivity gains that big data brought led to a great number of big data projects and a shortage of people with the required skills.

This course has been designed to build your knowledge and understanding of big data systems architectures and to equip you with the range of highly marketable, hands-on skills employed by the core technologies utilised in big data projects.

Course content
The course addresses technologies, advanced theories and techniques, along with their application, implementation and integration with legacy systems. You will analyse new demands and the application of technologies in the management of data and information resources, and examine big data technologies shaping the way data is now stored and utilised including the use of cloud stored massive datasets, distributed systems of an enterprise and how data utilisation can change and improve business processes.

Teaching approaches include lectures, tutorials, seminars and practical/hands-on sessions. You will also learn through extensive course work, class presentations, group work, and the use of a range of industry standard software such as R, Python, Hadoop, MySQL and Oracle.

Core modules
- Big Data Theory and Practice
- Business Systems Postgraduate Project
- Data Repositories Principles and Tools
- Data Warehousing and OLAP
- Research Methods and Professional Practice

Option modules
- Advanced Big Data Analytics
- Cloud Computing Applications
- Data Visualisation and Dash-Boarding
- Web and Social Media Analytics
- Web-enabled Database Applications

Professional recognition
This programme is accredited by BCS – The Chartered Institute for IT as meeting the requirements for Chartered IT Professional (CITP) Further Learning and partially meeting the requirements for Chartered Engineer (CEng).

Associated careers
The course equips you with the technological knowledge and the highly sought hands-on/practical skills for a successful career in big data application domains.

Graduates are expected to find employment as developers, analysts, architects of big data systems, database/web application developers, data compliance officers, data quality officers, data governance officers, data governance analysts, OLAP programmers, ETL programmers and application developers, specialists in data acquisition, knowledge/information extraction, data analysis, data aggregation, data representation.

BUSINESS INTELLIGENCE AND ANALYTICS MSc

This course addresses the need to propel information-gathering and data organisation, and exploit potential information and knowledge hidden in routinely collected data to improve decision-making. The course, which builds on the strength of two successful courses on data mining and on decision sciences, is more technology-focused, and stretches the data mining and decision sciences theme to the broader agenda of business intelligence.

You will focus on developing solutions to real-world problems associated with the changing nature of IT infrastructure and increasing volumes of data, through the use of applications and case studies, while gaining a deep appreciation of the underlying models and techniques. You will also gain a greater understanding of the impact technological advances have on business intelligence and analytics practices and know how to adapt to these changes.

Course content
Embedded into the course are two key themes. The first will help you to develop your skills in the use and application of various technologies, architectures, techniques, tools and methods. These include warehousing and data mining, distributed data management, and the technologies, architectures, and appropriate middleware and infrastructures supporting application layers. The second theme will enhance your knowledge of algorithms and the quantitative techniques suitable for analysing and mining data and developing decision models in a broad range of application areas.

The project consolidates the taught subjects covered, while giving you the opportunity to pursue in-depth study in your chosen area.

Teaching approaches include lectures, tutorials, seminars and practical sessions. You will also learn through extensive course work, class presentations, group research work and the use of a range of industry standard software such as R, Python, Simul8, Palisade Decision Tools, Hadoop and Oracle.

Core modules
- Big Data Theory and Practice
- Business Analytics
- Data Mining and Machine Learning
- Research Methods and Professional Practice
- Business Systems Postgraduate Project

Option modules
- Advanced Big Data Analytics
- Business Optimisation
- Data Visualisation and Dashboarding
- Data Warehousing and OLAP
- Data Repositories Principles and Tools
- Simulation Modelling: Risk, Processes, and Systems
- Web and Social Media Analytics

Professional recognition
This programme is accredited by BCS – The Chartered Institute for IT as meeting the requirements for Chartered IT Professional (CITP) Further Learning and partially meeting the requirements for Chartered Engineer (CEng).

Associated careers
Graduates can expect to find employment as consultants, decision modelling or advanced data analysts, and members of technical and analytics teams supporting management decision making in diverse organisations. Typical employers include local authorities, PLCs (such as GlaxoSmithKline, Prudential, Santander and Unilever), public sector organisations (such as the NHS and primary care trusts), retail head offices, the BBC, the Civil Service and the host of banks, brokers and regulators that make up the City, along with all the specialist support consultancies in IT, market research and forecasting, all of which use data for the full range of decision making.