



BACHELOR OF ENGINEERING IN DATA SCIENCE (HONOURS)

KPT/JPS [N/481/6/0835] 07/28 [MQA/PA14640]

DURATION

4 years

INTAKE

February / April / September

MEDIUM OF INSTRUCTION

English

ABOUT THE PROGRAMME

The Bachelor of Engineering in Data Science (Honours) is a new programme offered by Information and Communication Technology Department, School of Electrical and Computer Engineering. The programme is developed to cater for the growing market demand in data science graduates in various sectors, including but not limited to banking, commercial, industrial, medical, and public sectors. It aims at cultivating talents who are equipped with a global mindset and analytical capabilities in the face of the constant changing world. Upon completion of the programme, students will be equipped with mathematical, statistical, and computational skills needed in solving complex data problems.

The programme is supported by both local and international team of academicians, including those seconded from the main campus. Our academicians comprise PhD degree holders in their respective specialities. The programme is also supported by prominent academic leaders from Computer Science and Technology Programme, Artificial Intelligence Programme, Software Engineering Programme, and School of Mathematics. Apart from teaching, our academicians are also very active in research and publication. Their diverse backgrounds in the respective niche fields give them an advantage in teaching in view of the fact that data science is a unique yet cross-disciplinary study.

Our programme provides a strong analytical and statistical foundation for students to apply data science knowledge and techniques in solving a wide array of complex data problem. Students will be well-equipped with the required knowledge and skills to excel in their careers. The solid foundation acquired by the students also opens the door to opportunities of postgraduate studies in top universities around the world.

PROGRAMME HIGHLIGHTS

- A problem-based learning approach to solving real life data science problem
- Comprehensive coverage of mathematical, statistical, and programming approaches essential in solving complex data problems.
- An emphasis on the balance between theory and practice in the curriculum design
- An emphasis on the cross-specialization in the curriculum design which incorporates courses in Computer Science, Artificial Intelligence, Statistics, and Software Engineering.

CAREER OPPORTUNITIES

- Data Scientist
- Data Engineer
- Data Solution Specialist
- Data Architect
- Data Analyst
- Data Mining Specialist
- Applications Architect
- Analytics Manager
- Machine Learning Specialist
- Business Intelligence Developer
- Statistician
- Business Analyst
- Market Research Analyst
- Analyst Programmer
- Database Administrator
- Health Informatics Analyst
- Data Project Manager
- Bioinformatician
- Research Analyst



ENTRY REQUIREMENTS

STPM	A pass in STPM with at least a Grade C (GP2.0) in any 2 subjects
A-Level	A pass in A-Level with at least a Grade D in any 2 subjects
UEC	A pass in UEC with at least a Grade B in 5 subjects including Advanced Mathematics
Foundation/Matriculation	A pass in Foundation/Matriculation with at least CGPA 2.0 out of 4.0
Diploma	A pass in Diploma in Computer Science/Information System/Information Technology/Software Engineering/ any Science and Technology or the equivalent with at least CGPA 2.5* out of 4.0
AND	(i) Additional Mathematics** - a credit in SPM or the equivalent; OR (ii) Mathematics and any 1 Science/Technology/Engineering subject - a credit in SPM or the equivalent AND pass a Mathematics placement test organised by XMUM before joining the programme

NOTES: * Candidates with a CGPA of less than 2.5 but more than 2.0 may be accepted subject to a stringent internal evaluation process.
** The requirement for the Additional Mathematics at SPM level can be exempted if the Foundation/Matriculation or its equivalent offers a Mathematics course that is of a similar or higher level compared to the Additional Mathematics at SPM level.

**For other equivalent qualifications, please consult our programme counsellor.*

MAIN COURSES

CORE COURSES

Advanced Data Analysis
 Design and Analysis of Algorithms
 Applied Machine Learning
 Statistical Programming using R
 Regression Analysis
 Software Engineering
 Data Mining
 Time Series
 Big Data Analytics
 Advanced Machine Learning
 Calculus I A
 Linear Algebra
 Programming Language (C)
 Introduction to Intelligence Application
 Calculus II B
 Data Structures
 Python and Tensorflow Programming Language

Principles of Artificial Intelligence

Database

Statistics

Introduction to Data Science

Probability Theory

MAJOR ELECTIVE COURSES

Principles of Operating Systems

Computer Architecture

Computer Networks and Communication

Methods and Applications of Deep Learning

Object-Oriented Programming-Java

Introduction to Cloud Computing

Bayesian Statistics

Natural Language Processing

Statistical Learning

Multivariate Statistical Analysis

Deep Reinforcement Learning and Control

Computer Graphics

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The information in this brochure is correct at the time of publication. Xiamen University Malaysia (XMUM) reserves the right to change the information in line with updates from time to time. Please check the website (www.xmu.edu.my) for latest information.