Bachelor of Science (BSc) Overview

A Bachelor of Science (BSc) with our Faculty of Computing and Mathematical Sciences will give students the skills needed to be successful in a world where technology is rapidly changing our daily lives.

The BSc will enable your students to explore a range of scientific disciplines while developing strong problem-solving and critical thinking skills. As a graduate, they'll be invaluable in a world with more data and new technology than ever before.
Laying a good foundation of scientific knowledge is a key feature of the first year of the BSc. Even if they haven't studied science before, our introductory papers give them a taste of our broad range of subjects, from which they can then develop expertise in either Applied Computing, Computer Science, Data Analytics or Mathematics.

Applied Computing will appeal to students who want to gain sound technical knowledge of information systems and internet technologies. Computer Science will teach them how software systems, computers and people interact. Data Analytics gives them the tools and skills to make sense of large and complex data sets. Because the BSc is very similar to the first three years of the BCMS(Hons), students can choose when they graduate; after three years with a BSc or complete a fourth year and gain a BCMS(Hons) instead.

Y1	100 Level Major	100 Level Major	CSMAX170 Foundations in Computing and Mathematical Sciences	MATHS135 Discrete Structures	100 Level Science Elective	100 Level Science Elective	Elective	Elective
Y2	200 Level Major	200 Level Major	200 Level Major	200 Level Major*	CSMAX270 Cultural Perspectives	Elective	Elective	Elective
Y3	300 Level Major	300 Level Major	300 Level Major	Choose one from List A	300 Level Science Elective	Elective	Elective	Elective

Papers (15 points unless stated otherwise)

LIST A

COMPX374 Software Engineering Project
COMPX375 Information Systems Industry Project
COMPX390 Directed Study
COMPX391 Undergraduate Research Project
MATHS390 Directed Study
MATHS391 Undergraduate Research Project
SCIEN279 Preparation for the Professional Workplace
STATS390 Directed Study
STATS391 Undergraduate Research Project

** **Note:** For a major in Mathematics or Data Analytics, this paper will be taken at 300 level.*

BSc in Applied Computing

Y1	COMPX101 Introduction to Computer Science	COMPX161 Computing Media	CSMAX170 Foundations in Computing and Mathematical Sciences	MATHS135 STATS111 or STATS121	100 Level Science Elective	100 Level Science Elective	Elective	Elective
Y2	COMPX221 Programming for Creative Industries	COMPX222 Internet Applications	COMPX223 Database Practice and Experience	DSIGN241 Aspects of Web Design	CSMAX270 Cultural Perspectives	Elective	Elective	Elective
Y3	COMPX322 Web Development	COMPX324 User Experience Design	Any 300 Level Paper Listed for Applied Computing	COMPX375 Information Systems Industry Project	300 Level Science Elective	Elective	Elective	Elective

Note: *Please see page 65 for List A.*

Papers (15 points unless stated otherwise)

COMPX305 Finding Patterns in Data

COMPX306 Game Programming

COMPX323 Modern Databases

BSc in Computer Science

Y1	COMPX101 Introduction to Computer Science	COMPX102 Object-Oriented Programming	CSMAX170 Foundations in Computing and Mathematical Sciences	MATHS135 Discrete Structures	100 Level Science Elective	100 Level Science Elective	Elective	Elective
Y2	COMPX201 Data Structures and Algorithms	COMPX202 Mobile Computing and Software Architecture	COMPX203 Computer Systems	COMPX204 Practical Networking and Cyber Security	CSMAX270 Cultural Perspectives	Elective	Elective	Elective
Y3	COMPX361 Logic and Computation	Choose one from List B	Any COMPX3 Paper	Choose one from List A	300 Level Science Elective	Elective	Elective	Elective

Note: Please see page 65 for List A.

LIST B

Papers (15 points unless stated otherwise)

COMPX301 Problem Solving Using Algorithms

COMPX304 Advanced Networking and Cyber Security

COMPX306 Game Programming

COMPX307 Functional Programming

COMPX321 Mobile and Cyber-Physical Systems

COMPX322 Web Development

COMPX323 Modern Databases

COMPX341 Software Engineering Methodology

BSc in Data Analytics*

Y1	STATS111 or STATS121	COMPX101 Introduction to Computer Science	CSMAX170 Foundations in Computer and Mathematical Sciences	MATHS135 Discrete Structures	100 Level Science Elective	100 Level Science Elective	Elective	Elective
Y2	STATS221 Statistical Data Analysis	STATS226 Computational Bayesian Analysis	COMPX223 Database Practice and Experience	CSMAX270 Cultural Perspectives	200 Level Science Elective	Elective	Elective	Elective
Y3	COMPX305 or STATS321	Any 300 Level Paper listed for Data Analytics	Any 300 Level Paper listed for Data Analytics	Any 300 Level Paper listed for Data Analytics	Choose one from List A	Elective	Elective	Elective

Note: *Please see page 65 for List A.*

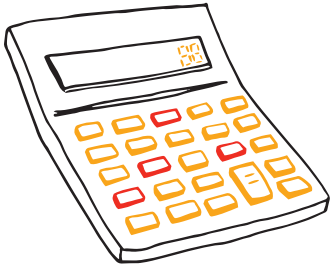
Papers (15 points unless stated otherwise)

STATS111 Statistics for Science

STATS121 Introduction to Statistical Methods

COMPX305 Finding Patterns in Data

STATS321 Advanced Data Analysis



*** Note:*** *Subject to approval*

BSc in Mathematics

Y1	MATHS101 Intro to Calculus	MATHS102 Intro to Algebra	CSMAX170 Foundations in Computing and Mathematical Sciences	MATHS135 Discrete Structures	100 Level Science Elective	100 Level Science Elective	Elective	Elective
Y2	MATHS201 Continuing Calculus	MATHS202 Linear Algebra	Any MATHS2 Paper	CSMAX270 Cultural Perspectives	200 Level Science Elective	Elective	Elective	Elective
Y3	MATHS301 or MATHS302	Any MATHS3 Paper	Any MATHS3 Paper	Any MATHS3 Paper	Choose one from List A	Elective	Elective	Elective

Note: *Please see page 65 for List A.*

Papers (15 points unless stated otherwise)

Students may include up to 30 points of STATS-coded papers as part of their Mathematics major.

MATHS301 Real and Complex Analysis

MATHS302 Group Theory