

# FACULTY OF SCIENCE

## DEPARTMENT OF MATHEMATICS AND STATISTICS

### DATA ANALYTICS

**Bachelor of Science with Honours in Data Analytics**  
**Bachelor of Science in Data Analytics**  
**Diploma of Higher Education in Data Analytics**  
**Certificate of Higher Education in Data Analytics**

*These regulations are to be read in conjunction with [General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level](#).*

#### **Mode of Study**

1. The programmes are available by full-time study only.

#### **Curriculum**

2. All students shall undertake an approved curriculum as follows:

#### **First Year**

All students shall undertake modules amounting to 120 credits as follows:

#### **Compulsory Modules**

<b>Module Code</b>	<b>Module Title</b>	<b>Level</b>	<b>Credits</b>
CS103	Machines, Languages and Computation	1	20
CS104	Information and Information Systems	1	20
CS105	Programming Foundations	1	20
MM101	Introduction to Calculus	1	20
MM102	Applications of Calculus	1	20
MM106	Essential Statistics	1	10
MM123	Geometry and Algebra	1	10

#### **Second Year**

All students shall undertake modules amounting to 120 credits as follows:

#### **Compulsory Modules**

<b>Module Code</b>	<b>Module Title</b>	<b>Level</b>	<b>Credits</b>
CS207	Advanced Programming	2	20

CS208	Logic and Algorithms	2	20
CS209	User and Data Modelling	2	20
MM204	Probability and Statistical Inference	2	20
MM206	Mathematical and Statistical Computing	2	20
MM221	Linear Algebra	2	10
MM222	Multivariate Calculus	2	10

### **Third Year**

All full-time students shall undertake modules amounting to 120 credits as follows:

#### **Compulsory Modules**

<b>Module Code</b>	<b>Module Title</b>	<b>Level</b>	<b>Credits</b>
CS308	Building Software Systems	3	20
MM304	Inference and Regression Modelling	3	20
MM307	Stochastics and Financial Econometrics	3	20

#### **Optional Modules**

40 credits chosen by Honours students from the list below; and by other students from the list below or modules listed in First and Second Year not previously taken or further Elective Modules.

<b>Module Code</b>	<b>Module Title</b>	<b>Level</b>	<b>Credits</b>
CS310	Foundations of Artificial Intelligence	3	20
CS312	Web Applications Development	3	20
CS316	Functional Programming	3	20
CS317	Mobile App Development	3	20
	Elective Modules		20

### **Fourth Year**

All full-time students shall undertake modules amounting to 120 credits as follows:

### **Compulsory Module**

<b>Module Code</b>	<b>Module Title</b>	<b>Level</b>	<b>Credits</b>
MM490	Data Analytics*	4	120

\*MM490 Data Analytics comprises either MM401 Communicating Mathematics and Statistics (20 credits) or CS408 Individual Project (Computer Science) (40 credits); and optional modules chosen from Lists A and B so that no curriculum contains no fewer than 40 credits in each subject.

### **Optional Modules**

#### **List A**

<b>Module Code</b>	<b>Module Title</b>	<b>Level</b>	<b>Credits</b>
MM404	Statistical Modelling and Analysis	4	20
MM407	Applied Statistics in Society	4	20
MM409	Mathematical Introduction to Networks	4	20
MM415	Medical Statistics	4	20

Not all optional modules on this list will be available in each academic year. Please check your programme handbook for confirmation of which optional modules will run.

#### **List B**

<b>Module Code</b>	<b>Module Title</b>	<b>Level</b>	<b>Credits</b>
CS409	Software Architecture and Design	4	20
CS410	Advanced Functional Programming	4	20
CS411	Theory of Computation	4	20
CS412	Information Mining and Access	4	20

Not all optional modules on this list will be available in each academic year. Please check your programme handbook for confirmation of which optional modules will run.

### **Progress**

3. In order to progress to the second year of the Honours programme in addition to satisfying the requirements of the [General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level](#), a student must also gain a pass in the following modules: MM101 Introduction to Calculus and MM102 Applications of Calculus.

4. In order to progress to the second year of the Bachelors programme, see [General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level](#).
5. In order to progress to the third year of the Honours programme, see [General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level](#).
6. In order to progress to the third year of the Bachelors programme, see [General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level](#).
7. In order to progress to the fourth year of the programme the [General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level](#) shall apply with at least 100 credits at level 3.

#### **Final Assessment and Classification**

8. On successful completion of the fourth year, a candidate will be awarded 120 Level 4 credits under the module code MM490.
9. The final classification for the degree of BSc with Honours in Data Analytics will normally be based on the first assessed attempt at compulsory and specified optional modules at Levels 3 and 4 taken in the third and fourth years.

#### **Award**

10. BSc with Honours: In order to qualify for the award of the degree of BSc with Honours in Data Analytics, see [General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level](#).
11. BSc: In order to qualify for the award of the degree of BSc in Data Analytics, see [General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level](#).
12. Diploma of Higher Education: In order to qualify for the award of a Diploma of Higher Education in Data Analytics, see [General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level](#).
13. Certificate of Higher Education: In order to qualify for the award of a Certificate of Higher Education in Data Analytics, see [General Academic Regulations – Undergraduate, Integrated Master and Professional Graduate Degree Programme Level](#).