# C09119 BACHELOR OF COMPUTING SCIENCE (HONOURS)

## Mathematical Analysis major, Autumn commencing, full time

The program below shows a suggested sequence of subjects for the **Mathematical Analysis major (MAJ01156)** for a student commencing the course in Autumn session. The study plan is intended as a guide only and do not take into account such factors as recognition of prior learning, changes in attendance mode and subject availability, or satisfactory academic progress.

Students should consult the Timetable Planner to confirm the availability of subjects in the current academic year.

| | | | | |
|---|---|---|---|---|
| | **Year 1** | | | |
| **AUTUMN** | Mathematics 1 33130<br>6 CPs | Discrete Mathematics 37181<br>6 CPs | Programming 1 41039<br>6 CPs | Communication for IT Professionals 31265<br>6 CPs |
| **SPRING** | Mathematics 2 33230<br>6 CPs | Web Systems 31268<br>6 CPs | Business Requirements Modelling 31269<br>6 CPs | Database Fundamentals 31271<br>6 CPs |
| | **Year 2** | | | |
| **AUTUMN** | Network Fundamentals 41092<br>6 CPs | Programming 2 48024<br>6 CPs | Computing Science Studio 1 41078<br>6 CPs | Linear Algebra 37233<br>6 CPs |
| **SPRING** | Professional Practice in Computing 43030<br>6 CPs | Theory of Computing Science 41080<br>6 CPs | Probability and Random Variables 37161<br>6 CPs | **CBK92127 Sub-major/Electives Choice**<br>6 CPs |
| | **Year 3** | | | |
| **AUTUMN** | Data Structures and Algorithms 31251<br>6 CPs | Computing Science Studio 2 41079<br>6 CPs | Regression and Linear Models 37252<br>6 CPS | Programming for Data Analysis 37373<br>6 CPs |
| **SPRING** | Technology Research Preparation 32144<br>6 CPs | Real Analysis 35007<br>6 CPs | Numerical Mwthods 35006<br>6 CPs | **CBK92127 Sub-major/Electives Choice**<br>6 CPs |
| | **Year 4** | | | |
| **AUTUMN** | Technology Research Methods 32931<br>6 CPs | Project Management and the Professional 31272<br>6 CPs | Complex Analysis 37234<br>6 CPs | **CBK92127 Sub-major/Electives Choice**<br>6 CPs |
| **SPRING** | Honours Project 31482<br>12 CPs | MAJ01156 Mathematical Analysis Options-6CP<br>6 CPs | **CBK92127 Sub-major/Electives Choice**<br>6 CPs | |

## COURSE STRUCTURE

**Core subjects (Computing Science) (STM91173) - 96CP**

- **33130 Mathematics 1**
- **33230 Mathematics 2**
- **31265 Communication for IT Professionals**
- **37181 Discrete Mathematics**
- **43030 Professional Practice in Computing**
- **31251 Data Structures and Algorithms**
- **48024 Programming 2**
- **41080 Theory of Computing Science**
- **31268 Web Systems**
- **31272 Project Management and the Professional**
- **31269 Business Requirements Modelling**
- **31271 Database Fundamentals**
- **41078 Computing Science Studio 1**
- **41079 Computing Science Studio 2**
- **41092 Network Fundamentals**
- **41039 Programming 1**

**Core Honours subjects (Computing Science) (STM91172) - 24CP**

- 32144 Technology Research Preparation
- 32931 Technology Research Methods
- 31482 Honours Project

**Major choice (CBK91220) - 48CP**

- Artificial Intelligence and Data Analytics major (MAJ10053)
- Business Information Systems Management major (MAJ02080)
- Cybersecurity and Privacy major (MAJ02900)
- Enterprise Software Development major (MAJ03519)
- Interaction Design major (MAJ02092)
- Mathematical Analysis major (MAJ01156)
- Networking and Cybersecurity major (MAJ03445)
- Quantum Information Science major (MAJ02901)

**Sub-Major/Electives Choice (CBK92127) - 24CP**

Select 24CP of options:

- SMJ10165 Applied and Industrial Optimisation Sub-major
- SMJ10166 Statistical Analysis Sub-major
- SMJ10167 Mathematical Analysis Extension Sub-major
- CBK90783 Electives/Sub-major Choice Block 1

**MAJORS**

| CORE | OPTIONS |
|---|---|
| **MATHEMATICAL ANALYSIS (MAJ01156)** | MAJ01156 Mathematical Analysis Options-6CP |
| 37233 Linear Algebra | Select 6 credit points from the options: |
| 37161 Probability and Random Variables | 35005 Lebesgue Integration and Fourier Analysis |
| 37252 Regression and Linear Models | 37262 Mathematical Statistics |
| 35007 Real Analysis | |
| 37373 Programming for Data Analysis | |
| 35006 Numerical Methods | |
| 37234 Complex Analysis | |
| MAJ01156 Mathematical Analysis Options-6CP | |