# Bachelor of Advanced Science

Bioinformatics
Data Science

**2027 ENTRY**

## Useful study planning / enrolment resources

| | | | |
|---|---|---|---|
| Course and Subject Handbook | Academic Calendars | Class Registration | Enrolment Resources |

**Attention International Student visa holders:** To remain compliant with your enrolments requirements as a Student visa holder you are required to enrol in at least one On-Campus, Multi-Modal or WIL subject offering in each compulsory study period and you cannot enrol in more than one third (33%) of your total course load through online or distance learning. To complete your course within your CoE duration students must maintain sufficient subject enrolment. If you are receiving US Federal Aid, there are further compliance considerations. Please contact financialaid@jcu.edu.au to confirm compliance of your subject selections.

Student Resources: If you require advice about your study plan, choosing electives, or which subjects to enrol in, please contact your major advisor or degree coordinator (CSE Course and Major Advisors). For information on available elective subject options please also refer to the Study Area guide (JCU STUDY AREA GUIDE — College of Science & Engineering).
**Intensive on-campus requirements:** Subjects labelled with *Intensive on-campus requirements involve mandatory on-campus or fieldwork attendance with extended hours over a dedicated face-to-face period. Please check the face-to-face dates for the subject in the subject handbook and do not enrol in subjects with overlapping face-to-face dates. For more information, see the CSE Student Guide to Succeeding in Trimester 2 Intensives on the CSE Student Resources webpage.

### How to read this planner

**PREREQ** Prerequisite information **ONLINE** Online offering **PLACEMENT** Placement requirement **INTENSIVE** Intensive on-campus requirement

## 2027

| TRIMESTER 1 | TRIMESTER 2 | TRIMESTER 3 |
|---|---|---|
| SC1101:03 Science, Technology and Truth | MA1003:03 Mathematical Techniques<br>**PREREQ:** MA1000 or MA1011 or MA1009 | SC1109:03 Modelling Natural Systems-Advanced<br>**PREREQ:** MA1000 or MA1009 |
| MA1000:03 Mathematical Foundations<br>**PREREQ:** MA1020 or MA0020 or BR0202 or High school subjects: Mathematical Methods or Specialist Mathematics (or equivalent such as Maths B or Maths C) | CH1020:03 Preparatory Chemistry<br>**OR**<br>Any Level 1, 2, 3 or 5 subject if already satisfied via previous study<br>If you have satisfied the Chemistry requirement via previous study, please contact enrolments@jcu.edu.au. | **Bioinformatics Major**<br>BS1001:03 Introduction to Biological Processes |
| **Bioinformatics Major**<br>CP1401:03 Problem Solving and Programming I | | **Data Science Major**<br>MA1580:03 Foundations of Data Science |

## 2028

| TRIMESTER 1 | TRIMESTER 2 | TRIMESTER 3 |
|---|---|---|
| SC2209:03 Quantitative Methods in Science-Advanced<br>**PREREQ:** MA1003 and (SC1109 plus 6 credit points of other Level 1 subjects) or admission in 116409 | **Bioinformatics Major**<br>BM2230:03 DNA to Proteins<br>**PREREQ:** 18 credit points of Level 1 subjects including BM1110 or BM1300 or BM1000 or BS1001 | **Bioinformatics Major**<br>BM2331:03 Bioinformatics I: Decoding DNA<br>**PREREQ:** BM1110 or BS1001<br>**ONLINE** |
| **Bioinformatics Major**<br>BS2470:03 Evolution<br>**PREREQ:** BZ1001 or BS1001 or BZ1005<br>**OR**<br>BM2330:03 Cell Biology: Signaling & Regulation<br>**PREREQ:** 18 credit points of Level 1 subjects including BM1110 or BM1000 or BS1001<br>Offered in TR3 | **Data Science Major**<br>CP1404:03 Programming II<br>**PREREQ:** CP1801 or CP1401 or CP1200 or EG1002 or CP2200 or SC1201<br>**ONLINE** | **Data Science Major**<br>MA2405:03 Advanced Statistical Modelling<br>**PREREQ:** MA1401 or BZ2001 or MA2401 or SC2202 or SC2209 and MA1000 |
| **Data Science Major**<br>Select 3 credit points of any level 1, 2, 3 or 5 subjects<br>*MA2000 recommended to enable selection of alternate core MA3212 | | **Bioinformatics Major**<br>MA3405:03 Statistical Data Mining for Big Data<br>**PREREQ:** MA2405 or MA2000 or SC2202 or SC2209 |

## 2029

| TRIMESTER 1 | TRIMESTER 2 | TRIMESTER 3 |
|---|---|---|
| **Bioinformatics Major**<br>BM3130:03 Genes, Genomes and Development<br>**PREREQ:** BM2230<br>**OR**<br>BZ3450:03 Ecological and Conservation Genetics<br>**PREREQ:** BS2470<br>**INTENSIVE**<br>Offered in TR2 | Select 3 credit points of subjects from **List 1 (Advanced Skills Subjects)** | SC3003:03 Science Research Internship<br>**PREREQ:** Admission to BAdvSc plus 15 credit points of AQ, BC, BS, BZ, CH, EV, EA, MA, MB, PH or SC Science Level 2 subjects<br>**OR**<br>SC3008:03 Professional Placement<br>**PREREQ:** Students must have successfully completed 12 second year credit points. |
| **Data Science Major**<br>MA3831:03 Natural Language Processing, Web Scraping and Large Data Processing<br>**PREREQ:** CP1404 and MA3405 | **Data Science Major**<br>MA3832:03 Neural Network and Deep Learning<br>**PREREQ:** MA3405 or MA5405 and CP1404<br>**OR**<br>MA3212:03 Optimisation and Operations Research<br>**PREREQ:** MA2000 | **Bioinformatics Major**<br>BM3331:03 Bioinformatics II: Mastering Big Genomic Data<br>**PREREQ:** BM2331 and SC2202 or SC2209 or MA2405 or BZ2001 or (BC3101 and HS2402) |
| | **Data Science Major**<br>Select 3 credit points of subjects from **List 1** | **Data Science Major**<br>Select 3 credit points of subjects from **List 1** |

## Course Handbook

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|---|---|
| Bachelor of Advanced Science | Bioinformatics Major<br>Data Science Major |

## Course Notes

Note: Students studying this major must select CP1401 and CP1404 within their course in order to satisfy prerequisites. Please refer to the course structure for details.

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|---|---|
| **Award Title** | Bachelor of Advanced Science |
| **Abbreviation** | BAdvSc |
| **Credit Points** | 72 |
| **AQF Level** | Level 7 – Bachelor Degree |
| **Location** | Townsville Bebegu Yumba, Cairns Nguma-bada |
| **Division** | Academy |
| **College** | College of Science and Engineering |
| **Expected Time to Complete** | 3 Years |
| **Maximum Time to Complete** | 9 Years |
| **Maximum Leave of Absence** | 3 Years |
| **CRICOS Code** | 092515M |