# 62530 Master of Data Science
## 2 Year Course Study Plan – Commencing Semester 1, 2021

Students who have completed degree studies in a non-cognate area, or equivalent as recognised by the Faculty, must complete relevant conversion units up to the value of 24 points, as advised by the Faculty.

| Year 1 | | | | |
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| Semester 1, 2021 | **CITS1401***<br>Computational Thinking with Python<br>**Note: Conversion Unit** | **STAT2401**<br>Analysis of Experiments<br>**Note: Conversion Unit** | **CITS4407**<br>Open Source Tools and Scripting | **OPTION** |
| Semester 2, 2021 | **CITS1402**<br>Relational Database Management Systems<br>**Note: Conversion Unit** | **STAT2402**<br>Analysis of Observations<br>**Note: Conversion Unit** | **OPTION** | **CITS4009**<br>Computational Data Analysis |
| **Year 2** | | | | |
| Semester 1, 2022 | **OPTION** | **STAT4066**<br>Bayesian Computing and Statistics<br>*Prereq: STAT1400 or STAT1520 or MATH1012 or STAT2401 or STAT2402* | **CITS5508**<br>Machine Learning<br>*Prereq: 12 points of programming-based units * | **CITS5504**<br>Data Warehousing<br>*Prereq: CITS1402* |
| Semester 2, 2022 | **STAT4064**<br>Applied Predictive Modelling<br>*Prereq: (STAT2401 and STAT2402) or STAT2062* | **CITS5503**<br>Cloud Computing<br>*Prereq: 12 points of programming-based units * | **OPTION** | **CITS5553**<br>Data Science Capstone Project<br>*Prereq: 24 points of L4/L5 units* |

* unit is available in Semester 1 and Semester 2; * programming-based units are: CITS1001 Software Engineering with Java; CITS1401 Computational Thinking with Python; CITS2002 Systems Programming and CITS2200 Data Structures and Algorithms; CITS2401 Computer Analysis and Visualisation; CITS2402 Introduction to Data Science; CITS4009 Computational Data Analysis. Students enrolled in the 62510 Master of Information Technology already meet the required "12 points of programming-based units" prerequisite.

| Optional Units: Students take units to the value of 24 points, including a minimum of 12 points at Level 5 from this group: | |
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| **CITS4402** Computer Vision (S1)<br>*Prereq: CITS2401 and MATH1012 (Note: Students must have the ability to program in a high-level programming language and the ability to reason in linear algebra and calculus.)* | **INMT5526** Business Intelligence (S2) |
| **CITS4403** Computational Modelling (S1)<br>*Prereq: 6 points of programming-based units * | **MGMT5504** Data Analysis and Decision Making (S1, S2) |
| **CITS4404** Artificial Intelligence and Adaptive Systems (S2)<br>*Prereq: 12 points of programming-based units * | **PHYS4021** Frontiers in Quantum Computation (S1)<br>*Prereq: MATH1012 or equivalent or higher* |
| **CITS4419** Mobile and Wireless Computing (S2)<br>*Prereq: CITS1001 and CITS2002 and CITS3002* | **PUBH4401** Biostatistics I (S1, S2)<br>*Prereq: knowledge of basic algebra, familiarity with handheld calculators and familiarity with computing in the Windows environment* |
| **CITS5014** Data Science Research Project Part 1 (S1, S2)<br>*Prereq: 18 points of L4/L5 units completed within the course with the equivalent of a UWA weighted average mark (WAM) of at least 70 percent. Note: Enrolment in the Data Science Research Project is by invitation only.* | **PUBH5769** Biostatistics II (S1, S2)<br>*Prereq: knowledge of basic algebra, familiarity with handheld calculators and familiarity with computing in the Windows environment* |

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| **CITS5015** Data Science Research Project Part 2 (S1, S2) <br> *Prereq: CITS5014* | **PUBH5785** Introductory Analysis of Linked Health Data (NSTP) |
| **CIT5505** Agile Web Development (S1) <br> *Prereq: 6 points of programming-based units• and familiarity with the contents of CITS1402 and CITS1401* | **PUBH5802** Advanced Analysis of Linked Health Data (NA 2021) <br> *Prereq: PUBH5785 or equivalent training/experience* |
| **CIT5506** The Internet of Things (S2) <br> *Prereq: 6 points of programming-based units•* | **STAT4063** Computationally Intensive Methods in Statistics (S2) <br> *Prereq: STAT3062 or STAT2401 or STAT2402 or STAT2062* |
| **CIT5507** High Performance Computing (S2) <br> *Prereq: 12 points of programming-based units•* | **STAT4065** Multilevel and Mixed-Effects Modelling (S1) <br> *Prereq: (STAT2401 and STAT2402) and (STAT3405 or STAT4066)* |
| **GENG5505** Project Management and Engineering Practice (S1, S2) <br> *Prereq: ENSC1001 or ENSC1003* | **STAT4067** Applied Statistics and Data Visualisation (NA 2021) <br> *Prereq: STAT1400 or STAT1520 or STAT2401 or STAT2402 or STAT2062 or MATH1012* |

**Optional Specialisation Streams:**

If you prefer some level of coherence between the optional units, we would like to suggest the following streams:

- **Business Intelligence Stream:** CITS5505 Agile Web Development; GENG5505 Project Management and Engineering Practice; INMT5526 Business Intelligence and MGMT5504 Data Analysis and Decision Making.
- **Population Health Stream:** PUBH4401 Biostatistics I; PUBH5769 Biostatistics II; PUBH5785 Introductory Analysis of Linked Health Data and PUBH5802 Advanced Analysis of Linked Health Data.
- **Advanced Statistics Stream + Research:** Data Science Research Project Part 1 and 2 [12 Points] and 12 points from: STAT4063 Computationally Intensive Methods in Statistics; STAT4065 Multilevel and Mixed-Effects Modelling; STAT4067 Applied Statistics and Data Visualisation.
- **Artificial Intelligence Stream + Research:** Data Science Research Project Part 1 and 2 [12 Points] and 12 points from: CITS4402 Computer Vision; CITS4403 Computational Modelling; CITS4404 Artificial Intelligence and Adaptive Systems; CITS5507 High Performance Computing.
- **Systems Stream + Research:** Data Science Research Project Part 1 and 2 [12 Points] and 12 points from: CITS4419 Mobile and Wireless Computing; CITS5506 The Internet of Things; CITS5507 High Performance Computing.

The Rules for the 62530 Master of Data Science can be found at: **handbooks.uwa.edu.au/rules-62530-MDSc**

All units have a value of six points unless otherwise stated.

Information about unit availability should be checked at the beginning of each semester and can be found at: **timetable.uwa.edu.au** or **Handbooks**.

**Further Help!**
Refer to the UniStart website for your step-by-step guide on planning your enrolment: **uwa.edu.au/unistart**. If you need to discuss your study plan further, please contact the EMS Student Service and Engagement Office: **enquiries-ems@uwa.edu.au**