Overview

Health Data Science (HDS) is the science and art of generating data-driven solutions through comprehension of complex real-world health problems, employing critical thinking and analytics to derive knowledge from (big) data. HDS is an emergent discipline, arising at the intersection of (bio)statistics, computer science, and health. The MSc Health Data Science covers the entire pipeline from comprehension of complex health issues, through data wrangling and management, machine learning and data mining, data analytics, data modelling, and communication including data visualisation.

MSc Health Data Science graduates will be well suited to an identified area of workforce demand, in both public and private health sectors. High-achieving graduates will have potential for consideration of PhD enrollment. The program is designed to appeal to both those new to Health Data Science and those already working in the field looking to upskill. The MSc is appropriate for both an Australian and international audience. Potential students from any undergraduate background and/or who possess relevant work experience will be considered for admission via the Graduate Certificate.

The program can be completed in 18 months full-time or part-time equivalent. The 72 unit of credit broadening Master of Science (MSc) in Health Data Science by coursework program is fully articulated, including options for Graduate Certificate (24 UOC), Graduate Diploma (48 UOC), and MSc. The MSc offers a choice between a 24 UoC workplace/internship research dissertation or a 6 UOC capstone project plus 18 UOC electives (from a selection of over 20 courses).
**Faculty**  
Faculty of Medicine

**Campus**  
Kensington

**Study Level**  
Postgraduate

**Typical duration**  
1.7 Years

**Delivery Mode**  
Face-to-face

**Intake Period**  
Term 1, Term 3

**Academic Calendar**  
3+ Calendar

**Minimum Units of Credit**  
72

**Award type**  
Masters (Coursework)

**Award(s)**  
Master of Science -  
MSc

**CRICOS Code**  
096225M
Learning Outcomes

1. Global outlook - Graduates will be able to articulate a global perspective for the potential of Health Data Science to positively impact health at both individual and community levels.

2. Enquiry-based learning - Graduates will be able to generate novel data-driven solutions through comprehension of complex real-world health problems, employing critical thinking and analytics to derive knowledge from (big) data.

3. Communication, adaptive and interactional skills - Graduates will be able to communicate knowledge arising from complex Health Data Science insights to diverse audiences, in a variety of media including data visualisation (Vis), oral and written word.

4. Advanced disciplinary knowledge and practice - Graduates will be able to apply the advanced techniques of Health Data Science to novel health contexts.

5. Cognitive skills and critical thinking - Graduates will be able to apply Statistical Thinking to articulate context appropriate data-driven solutions.

Graduate Capabilities:

For more information on Graduate Capabilities, please click on this link.
**Program Structure**

Students must complete 72 UOC as a standalone program.

1. Compulsory courses - 48 UOC
2. Prescribed elective courses - 24 UOC

**Core Courses**

Students must take 48 UOC of the following courses.

- **COMP9021 | 6 UOC**
  Principles of Programming

- **HDAT9100 | 6 UOC**
  Context of Health Data Science

- **HDAT9200 | 6 UOC**
  Statistical Foundations for Health Data Science

- **HDAT9400 | 6 UOC**
  Management and Curation of Health Data

- **HDAT9500 | 6 UOC**
  Health Data Analytics: Machine Learning and Data Mining

- **HDAT9600 | 6 UOC**
  Health Data Analytics: Statistical Modelling I

- **HDAT9700 | 6 UOC**
  Health Data Analytics: Statistical Modelling II

- **HDAT9800 | 6 UOC**
  Visualisation and Communication of Health Data

**Research Course**
Students must take at least 6 UOC, up to a maximum of 24 UOC of the following courses.

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<tr>
<th>Course</th>
<th>UOC</th>
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<tr>
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<td>Health Data Science: Dissertation (6 Units of Credit)</td>
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<tr>
<td>Health Data Science: Capstone</td>
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**Prescribed Electives**

Students can take up to a maximum of 18 UOC of the following courses. Note: Elective offerings can be grouped into the following themes, Bioinformatics, Health Informatics, Algorithms, Data Management, Web, Statistical Theory, Statistical Analytics, Pharmaceutical. Students may choose electives within the same theme or any combination of theme (with approval of Program Convenor).

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<tr>
<td>PHAR9120</td>
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PHAR9121  |  6 UOC  
Pharmacovigilance

One of the following:  
COMP9313  |  6 UOC  
Big Data Management

COMP9318  |  6 UOC  
Data Warehousing and Data Mining

One of the following:  
PHAR9114  |  6 UOC  
Health Technology Assessment

PHAR9115  |  6 UOC  
Advanced Health Technology Assessment

**Enrolment Disclaimer**

Unless advised otherwise by your program authority, you should follow the rules for the handbook for the year you commenced your program. You are also responsible for ensuring you enrol in courses according to your program requirements. myUNSW enrolment checks that you have met enrolment requirements such as pre-requisites for individual courses but not that a course will count towards your program requirements.
Admission Requirements

Entry Requirements

The entry criteria are:

- an undergraduate degree in a cognate discipline
- a degree in a non-cognate discipline at honours level (or above)
- successful completion of Graduate Diploma in Health Data Science 5372 program

or

- qualifications equivalent to or higher than Graduate Diploma in Health Data Science 5372 program on a case-by-case basis

Cognate discipline is defined as a degree in one of the following disciplines:
- a science allied with medicine, including
  - medicine
  - nursing
  - dentistry
  - physiotherapy
  - optometry
  - biomedical/ biological science
  - pharmacy
  - public health
  - veterinary science
  - biology
  - biochemistry
  - statistics
  - mathematical sciences
  - computer science
  - psychology
  - (health) economics
  - data science
  - other (case-by-case basis)

Recognition of prior learning (RPL) is awarded in accordance with UNSW 'Recognition of Prior Learning (Coursework Programs) Policy' and 'Recognition of Prior Learning Procedure' for both program admission and credit.

Criteria for RPL for admission is detailed in the program entry requirements.
In the case of HDAT9200 and HDAT9300, combinations of both formal and non-formal learning, and RPL accepted for program entry will be considered towards credit. For all other courses in the program, non-conferred formal learning beyond that acknowledged for program entry will be considered towards credit. Recognition of formal learning is assessed for equivalence to an entire (HDAT) course on a case-by-case basis. Recognition of non-formal learning will result from successful completion of an equivalent course from our suite of Continual Professional Development.

Credit granted will yield specified credit for the equivalent 6 UoC course. Reduction in the total volume of learning due to advance standing is limited to a maximum of 50% of the total UoC for the program.

For more information about admission requirements for various UNSW programs, visit the following website(s):

Domestic Students
International Student
Program Requirements

Recognition of Prior Learning

Credit (advance standing) is available for additional RPL beyond that acknowledged for program entry. Both formal and non-formal learning is considered. Recognition of formal learning is assessed for equivalence to an entire HDAT course, on a case-by-case basis. Credit granted for formal learning will yield specified credit for the equivalent 6 UoC course. Recognition of non-formal learning will result from micro-credentialing and awarding of Badges. Reduction in the total volume of learning due to advance standing is limited to a maximum of 12 UoC.

Progression Requirements

A minimum WAM of 50% in 48 UOC of core courses (equivalent to the Graduate Diploma 5372) to progress to electives.

The 72 UOC broadening MSc Health Data Science by coursework program is fully articulated, including options for Graduate Certificate Health Data Science 7372 program (24 UOC) and Graduate Diploma Health Data Science 5372 program (48 UOC).

Students enrolled in the MSc Health Data Science may exit early at the Graduate Certificate 7372 or Graduate Diploma 5372 programs if they meet the requirements of these degrees.

For more information on university policy on progression requirements please visit Academic Progression.
Pathways

Articulation Arrangements

Other program(s) within articulated suite:

Graduate Diploma in Health Data Science - GradDipHDS
5372 Health Data Science

Faculty: Faculty of Medicine
Campus: Kensington
Units of Credit: 48
Typical Duration: 1 Years

Read More

Graduate Certificate in Health Data Science - GradCertHDS
7372 Health Data Science

Faculty: Faculty of Medicine
Campus: Kensington
Units of Credit: 24
Typical Duration: 0.7 Years

Read More
Professional Outcomes

Career Opportunities

The MSc in Health Data Science aims to graduate workplace ready professionals, appealing to an identified area of workforce need. Thus graduates will be well positioned for a range of roles in both the public and private healthcare sectors. High-achieving students will also be well suited to further academic study, particularly at PhD level.
Recognition of Achievement

Award with Excellence

The Award with Excellence is awarded in coursework masters programs, including Masters (Extension) but with the exception of Masters (Extended) such as JD and MD, when a Weighted Average Mean (WAM) of at least 80% has been achieved and at least 50% of the requirements of the award are completed at UNSW. All eligible programs will award 'with Excellence' except in special circumstances where approval of Academic Board has been given for a program to opt out.

For more information, please visit:

Current Students Award with Excellence
**Program Fees**

At UNSW fees are generally charged at course level and therefore dependent upon individual enrolment and other factors such as student's residency status. For generic information on fees and additional expenses of UNSW programs, click on one of the following:

*Domestic Students*
*Commonwealth Supported Students*
*International Students*

**Additional Expenses**

No
Pre-2019 Handbook Editions

Access past handbook editions (2018 and prior)

Pre-2019 Handbook Editions
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Authorised by Deputy Vice-Chancellor (Academic)
CRICOS Provider Code 00098G
ABN: 57 195 873 179