MASTER OF SCIENCE IN ASTROPHYSICS

Follow your passion for understanding the Universe with our new, specialised Master of Science in Astrophysics degree.

Future proof your career - graduates with a Master’s degree in astrophysics have advanced knowledge of AI/machine learning, scientific visualisation and big data analytics. These skills are highly sought by employers in a broad range of areas - from fundamental research to the industry sector, and even as far afield as banking, finance and patent law.

COURSE DESCRIPTION

This two-year program comprises advanced coursework and a research project leading to a major thesis in:
- observational astronomy
- computational astrophysics
- experimental physics
- computational or theoretical physics

Many of our Master’s graduates proceed to further study, enrolling in a research Doctorate.

CAREER OPPORTUNITIES

Astrophysicists use their knowledge and training in diverse careers including:
- medical imaging
- synchrotron science
- design of advanced photonic devices
- managing astronomical observatories
- climate modelling and meteorology
- medical and scientific instrumentation
- the energy industry
- solar power
- industrial product development
- science teaching, and
- science communication.

Our graduates find employment in industry, hospitals and scientific organisations; recent examples include: Agilent, Optiscan, the Alfred Hospital, the Australian Synchrotron, the Australian Antarctic Division, CSIRO, the Australian Nuclear Science and Technology Organisation, managing astronomical observatories, the EPA, and many other organisations.

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FURTHER STUDY – RESEARCH PROJECTS

An important feature of the Master’s degree is the research project, which extends over two years and is devoted to exploring in-depth a contemporary topic in observational astronomy, computational astrophysics, experimental physics or computational/theoretical physics.

For a full list of research projects visit: monash.edu/science/schools/physics/masters/masters-project
COURSE STRUCTURE

The degree offers a wide choice of advanced coursework units and a research project.

Coursework units can be chosen from:

- Computational astrophysics (compulsory)
- Exoplanets, stars and stellar processes, high energy astrophysics
- General relativity and cosmology, advanced observational astronomy
- Magneto-hydrodynamics I and II
- Digital image processing, data science
- Quantum mechanics, Advanced quantum mechanics
- Quantum fluids and many body theory
- Quantum field theory I and II, particle physics, classical electrodynamics
- Quantum information and quantum computing
- Condensed matter physics I and II, statistical mechanics
- Advanced statistical mechanics and critical phenomena
- X-ray optics, atom and quantum optics

For more information: monash.edu/master-science

SCHOLARSHIPS

You may be able to apply for generous scholarship opportunities to support you with your studies.

For more information: monash.edu/study/fees-scholarships
<table>
<thead>
<tr>
<th>YEAR 1</th>
<th>Semester 1</th>
<th>ASP4020</th>
<th>Astrophysics coursework A (12 points)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>ASP4021</td>
<td>Astrophysics coursework B (12 points)</td>
</tr>
<tr>
<td>YEAR 1</td>
<td>Semester 2</td>
<td>ASP4000</td>
<td>Astrophysics research project (24 points)</td>
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<tr>
<td>YEAR 2</td>
<td>Semester 1</td>
<td>ASP5020</td>
<td>Advanced astrophysics coursework A (12 points)</td>
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<td></td>
<td>ASP5021</td>
<td>Advanced astrophysics coursework B (12 points)</td>
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<tr>
<td>YEAR 2</td>
<td>Semester 2</td>
<td>ASP5000</td>
<td>Advanced astrophysics research project (24 points)</td>
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**Part A: Advanced studies**
Consolidates the student’s theoretical and/or technical knowledge in an area of specialisation.

**Part B: Research project**
To develop the student’s ability to establish, plan and execute a research project under the guidance of an academic supervisor.

**Part C: Extended technical studies**
To deepen the student’s understanding of specific topics within their chosen discipline.

**Part D: Advanced research project**
Students will establish, plan, execute and report on an advanced research project. Students will work with a supervisor on a chosen topic.
ENTRY REQUIREMENTS

**Entry Level 1**
- 96 points to complete
- **Duration**: 2 years full-time
- **Intakes**: February and July

**Entry Level 2**
- 48 points to complete
- **Duration**: 1 year full-time
- **Intakes**: February and July

An undergraduate degree (equivalent to an Australian undergraduate degree) with a major in astronomy, astrophysics or a related discipline with at least a 65% average or qualification/experience that the faculty considers to be equivalent.

A four-year Australian honours degree (or equivalent) with a major in astronomy, astrophysics or a related discipline with at least 65% average or qualification/experience or a satisfactory substitute that the faculty considers to be equivalent.

**English entry requirements**

<table>
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<tr>
<th>IELTS (Academic English Only)</th>
<th>TOEFL (Internet-based)</th>
<th>Pearsons Test of English (PTE)</th>
<th>Cambridge Certificate of Proficiency in English (CPE) &amp; Cambridge Certificate in Advanced English (CAE)*</th>
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</thead>
<tbody>
<tr>
<td>6.5 Overall (no band lower than 6.0)</td>
<td>79 Overall Writing: 21 Speaking: 18 Reading: 13 Listening: 12</td>
<td>58 Overall (no band lower than 50)</td>
<td>176 Overall (no band lower than 169)</td>
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*Test taken from January 2015 and onwards

**Tuition fees**

International students
A$44,500 per year.
Further information
monash.edu/physics

International students
Australia freecall tel: 1800 181 838
Tel: +61 3 9903 4788 (outside Australia)
Email: study@monash.edu
facebook.com/MonashUniScience
youtube.com/user/ScienceMonashUni
wechat: MonashUniAus
Youku: Monash 蒙纳士大学
weibo.com/monashuniversityaust