

Master of Physics Astronomy & Astrophysics

Information for Students Commencing in 2021

Matthew Young



THE UNIVERSITY OF
WESTERN
AUSTRALIA

Our Programme

Programme Chair		Specializations	Specialization Coordinators
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Prof Ju Li



Master of Physics

Astrophysics

Computational

Experimental

Medical

Theoretical



Matthew Young



Jingbo Wang



Ju Li



Pejman Rowshan Farzad



Darren Grasso

Master of Physics

Astronomy & Astrophysics Specialisation

See:

- [UWA Handbook](#) Entry
- [Specific Information](#) on the Astronomy & Astrophysics Specialisation

Master of Physics

Fees:

Master of Physics at UWA has Commonwealth Supported Places (CSP) for Domestic Students.

Master of Physics

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- The full fee for a full-time domestic students is \$27,945 (2020)
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- The CSP student contribution is \$9,359 (\$1170 per 6-point unit). This student contribution can be paid off via HECS loans.

Master of Physics

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Few Australian Universities have CSPs for Physics/Astrophysics Masters courses!

Structure

UWA Credit Points

- 1 UWA Unit = 6 UWA Credit Points
- 1 UWA Unit = $\frac{1}{8}$ Equivalent Full Time Student Load (EFTSL)
- 4 Units per Semester x 2 Semesters = 1 EFTSL / year

Structure

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UWA Master of Physics = 96 Credit Points = 16 Units

- 10 units Coursework
- 6 units Research Project

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UWA Master of Physics = 96 Credit Points = 16 Units

- 10 units Coursework: 10 = 6 core + 4 other
- 6 units Research Project: 6 = 1 prep + 4 work + 1 report

Coursework: $10 = 6 + 4$

Up to 4 Conversion Units (if required)

Coursework: 10 = 6 + 4

Up to 4 Conversion Units (if required)

Code	Avail	Unit Name
CITS1401	S1,2	Computational Thinking with Python
MATH2501	S2	Advanced Mathematical Methods
PHYS2001	S1	Quantum Physics and Electromagnetism
PHYS2002	S2	The Physics of Particles
PHYS3001	S1	Quantum Mechanics and Atomic Physics
PHYS3002	S2	Electrodynamics and Relativity
PHYS3003	S1	Astrophysics & Space Science
PHYS3004	S2	Advanced Quantum Mechanics
PHYS3011	S1	Mathematical Physics
PHYS3012	S2	Frontiers in Modern Physics

Coursework: 10 = 6 + 4

Core Unit

Astrophysics	Computational	Experimental	Theoretical	Medical
Cosmological Physics	Computational Methods for Physics	Frontiers in Experimental Physics	Symmetry Principles in Physics	Anatomy and Biology for Medical Physicists
Computational Statistics for Physics	Advanced Computational Physics	Quantum Measurement and Technology	Electrodynamics and Differential Geometry	Medical Imaging Physics
Computational Methods for Physics	Computational Statistics for Physics	Computational Methods for Physics	Cosmological Physics	Radiation Biology and Protection
Special Topics in Physics I (PHYS4415, S1)				Radiotherapy Physics
Special Topics in Physics II (PHYS5510, S2)				Radiation Physics and Dosimetry
Option unit(s):				

Coursework: 10 = 6 + 4

Core Units

Astrophysics	Computational	Experimental	Theoretical	Medical
Cosmological Physics	Computational Methods for Physics	Frontiers in Experimental Physics	Symmetry Principles in Physics	Anatomy and Biology for Medical Physicists
Computational Statistics for Physics	Advanced Computational Physics	Quantum Measurement and Technology	Electrodynamics and Differential Geometry	Medical Imaging Physics
Computational Methods for Physics	Computational Statistics for Physics	Computational Methods for Physics	Cosmological Physics	Radiation Biology and Protection
Special Topics in Physics I (PHYS4415, S1)				Radiotherapy Physics
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Core Units

Astrophysics	Computational	Experimental	Theoretical	Medical
Cosmological Physics	Computational Methods for Physics	Frontiers in Experimental Physics	Symmetry Principles in Physics	Anatomy and Biology for Medical Physicists
Computational Statistics for Physics	Advanced Computational Physics	Quantum Measurement and Technology	Electrodynamics and Differential Geometry	Medical Imaging Physics
Computational Methods for Physics	Computational Statistics for Physics	Computational Methods for Physics	Cosmological Physics	Radiation Biology and Protection
Special Topics in Physics I: Galaxies and Galactic Dynamics				Radiotherapy Physics
Special Topics in Physics II: Optical and Radio Astronomy Techniques				Radiation Physics and Dosimetry
Other unit(s):				

Coursework: 10 = 6 + 4

Core Units

Astrophysics	Computational	Experimental	Theoretical	Medical
Cosmological Physics	Computational Methods for Physics	Frontiers in Experimental Physics	Symmetry Principles in Physics	Anatomy and Biology for Medical Physicists
Computational Statistics for Physics	Advanced Computational Physics	Quantum Measurement and Technology	Electrodynamics and Differential Geometry	Medical Imaging Physics
Computational Methods for Physics	Computational Statistics for Physics	Computational Methods for Physics	Cosmological Physics	Radiation Biology and Protection
Special Topics in Physics I: Galaxies and Galactic Dynamics				Radiotherapy Physics
Special Topics in Physics II: Optical and Radio Astronomy Techniques				Radiation Physics and Dosimetry
<p>At least one Other Unit from:</p> <p>Frontiers in Experimental Physics: Astronomical and Gravitational Instrumentation</p> <p>Physics Reading Unit: Processes of Radiation, the Interstellar Medium and Star Formation</p> <p>+ Others</p>				

Research: 1 + 4 + 1

Research Proposal (1 unit)

- Literature review
- Preliminary project work
- Proposal
- Oral Presentation
- Written proposal

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- Literature review
- Preliminary project work
- Proposal
- Oral Presentation
- Written proposal

Research Project Part 1-4 (4 units)

- Work hard on research project

Research: 1 + 4 + 1

Research Proposal (1 unit)

- Literature review
- Preliminary project work
- Proposal
- Oral Presentation
- Written proposal

Research Project Part 1-4 (4 units)

- Work hard on research project

Research Presentation (1 unit)

- Oral Presentation
- Written Dissertation

Example Study Plans

Example Study Plans [available here](#)

- 🔄 *[Kim](#) has completed an undergraduate degree at UWA*
- 🔄 *[Sam](#) is a domestic student who has completed an undergraduate degree in Physics, and requires some conversion units prior to commencing research..*
- 🔄 *[Avery](#) is a domestic student who has completed an undergraduate degree in Physics, and requires some conversion units for coursework, but is otherwise ready to commence some research.*
- 🔄 *[Ash](#) is an international student commencing in Semester 2, and requires some conversion units*
- 🔄 *[Jo](#) is an international student commencing in Semester 2, with a strong background in physics and astrophysics*
- 🔄 *[Jay](#) is a domestic student who completed an undergraduate degree in Physics two years ago, with a strong focus on quantum mechanics*
- 🔄 *[Cam](#) is a domestic student who completed an undergraduate degree in Physics four years ago*
- 🔄 *[Jackie](#) has completed an undergraduate degree at UWA, and does not want to take optional units*

Example Study Plans: “Kim”

Code	Avail	Unit Name	Topic	Order
PHYS4415	S1	Special Topics in Physics I	Galaxies & Galactic Dynamics	1
SHPC4001	S1	Computational Methods for Physics		1
PHYS4020	S1	Frontiers in Experimental Physics	Astronomical & GW Instrumentation	1
PHYS5562	S1,2	Research Proposal in Astronomy & Astrophysics		1
PHYS5510	S2	Special Topics in Physics II	Optical and Radio Astronomy	2
PHYS4418	S2	Cosmological Physics		2
PHYS5513	S2	Computational Statistics for Physics		2
PHYS5301	S1,2	Physics Research Project Part 1		2
PHYS5302	S1,2	Physics Research Project Part 2		3
PHYS5303	S1,2	Physics Research Project Part 3		3
PHYS4010	S1	Symmetry Principles in Physics		3
PHYS5512	S1,2	Physics Reading Unit	Processes of Radiation, the Interstellar Medium, & Star Formation	3
PHYS5304	S1,2	Physics Research Project Part 4		4
PHYS5563	S1,2	Dissertation in Astronomy & Astrophysics		4
PHYS5010	S2	Electrodynamics and Differential Geometry		4
SHPC4002	S2	Advanced Computational Physics	High-Performance Computing	4

Example Study Plans: “Sam”

Code	Avail	Unit Name	Topic	Order
CITS1401	S1,2	Computational Thinking with Python		1
PHYS3003	S1	Astrophysics & Space Science		1
PHYS4415	S1	Special Topics in Physics I	Galaxies & Galactic Dynamics	1
PHYS4020	S1	Frontiers in Experimental Physics	Astronomical & GW Instrumentation	1
PHYS3002	S2	Electrodynamics and Relativity		2
PHYS3012	S2	Frontiers in Modern Physics		2
PHYS5510	S2	Special Topics in Physics II	Optical and Radio Astronomy	2
PHYS5513	S2	Computational Statistics for Physics		2
SHPC4001	S1	Computational Methods for Physics		3
PHYS5562	S1,2	Research Proposal in Astronomy & Astrophysics		3
PHYS5301	S1,2	Physics Research Project Part 1		3
PHYS5302	S1,2	Physics Research Project Part 2		3
PHYS4418	S2	Cosmological Physics		4
PHYS5303	S1,2	Physics Research Project Part 3		4
PHYS5304	S1,2	Physics Research Project Part 4		4
PHYS5563	S1,2	Dissertation in Astronomy & Astrophysics		4

Example Study Plans: “Avery”

Code	Avail	Unit Name	Topic	Order
CITS1401	S1,2	Computational Thinking with Python		1
PHYS3003	S1	Astrophysics & Space Science		1
PHYS4020	S1	Frontiers in Experimental Physics	Astronomical & GW Instrumentation	1
PHYS5562	S1,2	Research Proposal in Astronomy & Astrophysics		1
PHYS3002	S2	Electrodynamics and Relativity		2
PHYS3012	S2	Frontiers in Modern Physics		2
PHYS5510	S2	Special Topics in Physics II	Optical and Radio Astronomy	2
PHYS5301	S1,2	Physics Research Project Part 1		2
PHYS4415	S1	Special Topics in Physics I	Processes of Radiation, the Interstellar Medium, & Star Formation	3
SHPC4001	S1	Computational Methods for Physics		3
PHYS5302	S1,2	Physics Research Project Part 2		3
PHYS5303	S1,2	Physics Research Project Part 3		3
PHYS5513	S2	Computational Statistics for Physics		4
PHYS4418	S2	Cosmological Physics		4
PHYS5304	S1,2	Physics Research Project Part 4		4
PHYS5563	S1,2	Dissertation in Astronomy & Astrophysics		4

Example Study Plans: “Jackie”

Code	Avail	Unit Name	Topic	Order
PHYS4415	S1	Special Topics in Physics I	Galaxies & Galactic Dynamics	1
SHPC4001	S1	Computational Methods for Physics		1
PHYS4020	S1	Frontiers in Experimental Physics	Astronomy & GW Instrumentation	1
PHYS5562	S1,2	Research Proposal in Astronomy & Astrophysics		1
PHYS5510	S2	Special Topics in Physics II	Optical & Radio Astronomy	2
PHYS4418	S2	Cosmological Physics		2
PHYS5513	S2	Computational Statistics for Physics		2
PHYS5301	S1,2	Physics Research Project Part 1		2
PHYS5302	S1,2	Physics Research Project Part 2		3
PHYS5303	S1,2	Physics Research Project Part 3		3
PHYS5304	S1,2	Physics Research Project Part 4		3
PHYS5563	S1,2	Dissertation in Astronomy & Astrophysics		3

Remember: You will not be alone ...

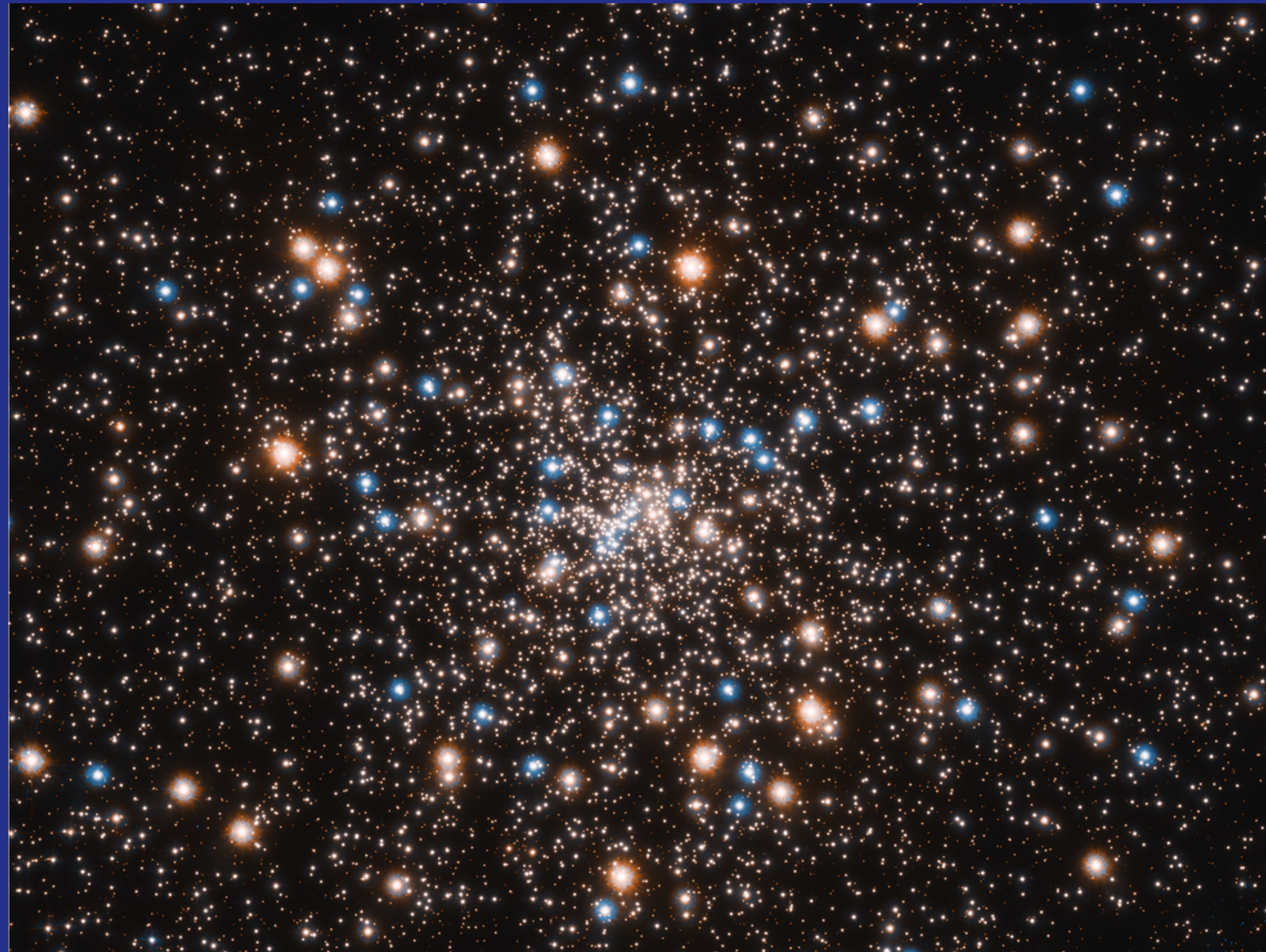


Image Credit: NASA - Jewel Box Cluster

Questions?



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