THE UNIVERSITY OF SYDNEY

Physics Major

Year 1

	No HSC Physics	HSC Physics	HSC Physics Result >85	HSC Physics Result >92
Semester 1	**PHYS1002 Physics 1 (Fundamentals)** Language of physics Mechanics Oscillations and waves Experimental physics 6cp	**PHYS1001 Physics 1 (Regular)** Mechanics Thermal physics Oscillations and waves Experimental physics 6cp	**PHYS1901 Physics 1A (Advanced)** Mechanics Thermal physics Waves, oscillations and chaos Experimental physics 6cp	**PHYS1903 Physics 1A SSP (Special Studies Program)** Mechanics Thermal physics Waves, oscillations and chaos Experimental physics Research project 6cp
Semester 2	**PHYS1004 Physics 1 (Environmental and Life Sciences)** Properties of matter Electromagnetism Radiation and matter Experimental physics 6cp	**PHYS1003 Physics 1 (Technological)** Fluids Electromagnetism Quantum physics Experimental physics 6cp	**PHYS1902 Physics 1B (Advanced)** Fluids Electricity and magnetism Quantum physics Experimental physics 6cp	**PHYS1904 Physics 1B SSP** Fluids Electricity and magnetism Quantum physics Experimental physics Research project 6cp

Year 2

Semester 1	**PHYS2011 Physics 2A** Optics Thermodynamics Computational physics Experimental physics 6cp		**PHYS2911 Physics 2A (Advanced)** Optics Thermodynamics Computational physics Experimental physics 6cp	**PHYS2921 Physics 2A SSP** Optics Thermodynamics Computational physics Experimental physics Research project 6cp
Semester 2	**PHYS2012 Physics 2B** Quantum physics Electromagnetic properties of matter Computational physics 6cp		**PHYS2912 Physics 2B (Advanced)** Quantum physics Electromagnetic properties of matter Computational physics 6cp	**PHYS2922 Physics 2B SSP (Special Studies Program)** Quantum physics Electromagnetic properties of matter Computational physics Research project 6cp

Year 3

	Core Unit	Selective Unit	Core Unit	Selective Unit
Semester 1	**PHYS3034 Quantum, Statistical and Comp Phys** Quantum physics Statistical mechanics Computational physics 6cp	**PHYS3036 Condensed Matter and Particle Physics** Condensed matter Particle physics Experimental physics 6cp or **PHYS3888 Physics Interdisciplinary Project** Lecture and tutorial component Project componant 6cp or **SCPU3001 Science Interdisciplinary Project** Project with industry and community partners 6cp	**PHYS3934 Quantum, Statistical, and Comp Phys (Advanced)** Quantum physics Statistical mechanics Computational physics 6cp	**PHYS3936 Condensed Matter and Particle Phys (Advanced)** Condensed matter Particle physics Experimental physics 6cp or **PHYS3888 Physics Interdisciplinary Project** Lecture and tutorial component Project componant 6cp or **SCPU3001 Science Interdisciplinary Project** Project with industry and community partners 6cp
Semester 2	**PHYS3035 Electrodynamics and Optics** Electrodynamics Optics Experimental physics 6cp	**PHYS3037 Plasma and Astrophysics** Plasma physics Astrophysics Experimental physics 6cp or **PHYS3888 Physics Interdisciplinary Project** Lectures and tutorials Project component 6cp or **SCPU3001 Science Interdisciplinary Project** Project with industry and community partners 6cp	**PHYS3934 Electrodynamics and Optics (Advanced)** Electrodynamics Optics Experimental physics 6cp	**PHYS3937 Plasma and Astrophysics (Advanced)** Plasma physics Astrophysics Experimental physics 6cp or **PHYS3888 Physics Interdisciplinary Project** Lectures and tutorials Project component 6cp or **SCPU3001 Science Interdisciplinary Project** Project with industry and community partners 6cp

Please note. You must complete one selective unit and one interdisciplinary project unit in a Physics Major

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Physics Major Course Structure

Year 1		Year 2		Year 3	
Semester 1	Semester 2	Semester 1	Semester 2	Semester 1	Semester 2
Physics 1 or Physics 1A PHYS1002 PHYS1001 PHYS1901 PHYS1903 6cp	**Physics 1 or Physics 1B** PHYS1004 PHYS1003 PHYS1902 PHYS1904 6cp	**Physics 2A** PHYS2011 PHYS2911 PHYS2921 6cp	**Physics 2B** PHYS2012 PHYS2912 PHYS2922 6cp	**Quantum, Statistical and Comp Physics** PHYS3034 PHYS3934 6cp	**Electrodynamics and Optics** PHYS3035 PHYS3934 6cp
Calculus of One Variable MATH1021 MATH1921 MATH1931 3cp	**Multivariable Calculus and Modelling** MATH1023 MATH1923 MATH1933 3cp	**Vector Calculus and Differential Equations** MATH2021 MATH2921 6cp	**Astrophysics and relativity** PHYS2013 PHYS2913 PHYS2923 6cp	**Condensed Matter and Particle Physics** PHYS3036 PHYS3936 or **PHYS3888 Physics Interdisciplinary project** or **SCPU3001 Science Interdisciplinary project** 6cp	**Plasma and Astrophysics** PHYS3037 PHYS3937 or **PHYS3888 Physics Interdisciplinary project** or **SCPU3001 Science Interdisciplinary project** 6cp
Linear Algebra MATH1002 MATH1902 3cp	**Statistical Thinking with Data** MATH1005 MATH1905 3cp				
OLET Any combination of OLET units 6cp	**OLET** Any combination of OLET units 6cp	**Elective** 6cp	**Elective** 6cp	**Major 2** 6cp	**Major 2** 6cp
Major 2 6cp	**Major 2** 6cp	**Major 2** 6cp	**Major 2** 6cp	**Major 2** 6cp	**Major 2** 6cp

This is an example of the course structure for a physics major for a student intending to continue into Honours.

Physics OLEs and Electives

Various sessions	**OLET1605 Communication in STEM** 2cp	**OLET1618 Data Science in Astronomy: Algorithms** 2cp	**OLET1620 Data Science in Astronomy: Analysis** 2cp	**OLET1622 Numbers and Numerics** 2cp
	OLET1636 Astronomy: from Earth to Exoplanets 2cp	**OLET1638 Astronomy: from Stars to Black Holes** 2cp	**OLET1640 Astronomy: from Big Bang to Darkness** 2cp	**OLET1652 How to Estimate Anything** 2cp
	OLET2610 Foundations of Quantum Computing 2cp			
Semester 1		**COSC2002 Computational Modelling** 6cp	**COSC2902 Computational Modelling (Advanced)** 6cp	
Semester 2	**NANO2002 Introduction to Nanoscience** 6cp	**PHYS2013 Astrophysics and Relativity** Cosmology Special relativity Experimental physics 6cp	**PHYS2913 Astrophysics and Relativity (Advanced)** Cosmology Special relativity Experimental physics 6cp	**PHYS2923 Astrophysics and Relativity SSP** Cosmology Special relativity Experimental physics Research project 6cp