

# PROGRAM PLAN

## BACHELOR OF SCIENCE (Physics Major)

**PROGRAM OPTION:**  
120 Unit PHYSICS Major

**START DATE:**  
Semester 1, 2019 - 2021

**LOCATION:**  
Callaghan and Central Coast

This Program Plan is an enrolment guide to ensure you are on track to graduate. If at any time you wish to vary from this program plan seek advice from your Academic Program Advisor to ensure you remain on track.

 [PROGRAM HANDBOOK](#)  
 [COURSE HANDBOOK](#)

**NAME:**  
**STUDENT NO.:**

### COURSE STATUS KEY

**C** = Completed  
**En** = Enrolled  
**NS** = Not Started

YEAR 1	SEMESTER 1	SCIE1001 Professional Scientific Thinking  CORE	SCIE1002 Multidisciplinary Laboratories  CORE	PHYS1210 Advanced Physics I  MAJOR	MATH1110* Maths for Eng, Science & Technology 1  MAJOR	SEMESTER 2	STAT1070 Statistics for the Sciences  CORE	PHYS1220 Advanced Physics II  MAJOR	MATH1120* Maths for Eng, Science & Technology 2  MAJOR	ELECTIVE** 1000/2000/3000 level  ELECTIVE	
		SCIE2001 Professional Employment Skills  CORE	PHYS2111 Classical Physics 1  MAJOR	PHYS2211 Modern Physics 1  MAJOR	ELECTIVE** 1000/2000/3000 level  ELECTIVE		SCIE2002 Interdisciplinary Challenges  CORE	PHYS2112 Classical Physics 2  MAJOR	MATH2310 Calculus of Science & Engineering  MAJOR	ELECTIVE** 2000/3000 level  ELECTIVE	
	YEAR 2	SEMESTER 1	SCIE3001A Transdisciplinary Capstone: Planning and Implementing  CORE	PHYS3112 Photonics  MAJOR	PHYS3111 Biophysics  MAJOR	ELECTIVE** 1000/2000/3000 Level --- OR --- MATH3820** Numerical Methods  MAJOR	SEMESTER 2	SCIE3001B Transdisciplinary Capstone: Implementing and Communicating  CORE	PHYS3211 Quantum Information Science  MAJOR	ELECTIVE** 2000/3000 level ELECTIVE OR MATH2242** Complex Analysis (replaced MATH3242) DIRECTED	ELECTIVE** 2000/3000 level  ELECTIVE
			SCIE2001 Professional Employment Skills  CORE	PHYS2111 Classical Physics 1  MAJOR	PHYS2211 Modern Physics 1  MAJOR	ELECTIVE** 1000/2000/3000 level  ELECTIVE		SCIE2002 Interdisciplinary Challenges  CORE	PHYS2112 Classical Physics 2  MAJOR	MATH2310 Calculus of Science & Engineering  MAJOR	ELECTIVE** 2000/3000 level  ELECTIVE
YEAR 3	SEMESTER 1										

\*Important Information for Pre 2021 students – MATH1210 and MATH1220 no longer offered. Please refer to the transition document for further information.

\*\* Elective Options include: Science Elective Pathways or any unrestricted courses offered within the university. When choosing electives students must consider that the courses for the overall program must not exceed 100 units at 1000 level and must include a minimum of 40 units at 2000 level and a minimum of 40 units at 3000 level.

++ Students must complete either MATH2242 (replaced MATH3342) or MATH3820 to count towards their Physics Major.

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To be eligible to graduate make sure you have completed 240 units (10 units = 1 course unless otherwise specified) which meet the following criteria:

- Core courses – 70 units
- Major courses – 120 units, visit the [Program Handbook](#) for more information.
- Elective courses – 50 units (Physics Major only) –students completing the Physics Major will complete an additional elective as the 10 unit MATH Directed course counts as both a Program Directed Course and Major course. Electives can be chosen from the Science Elective Pathways or any unrestricted courses offered within the University. Refer to the Science Elective Pathway documents located in the [Program Handbook](#) or visit the [Course Handbook](#) to see a list of available electives.
- Students must not exceed 100 units at 1000 level in this program.
- **Students who commenced in 2019** must complete a minimum of 40 units at all levels (1000, 2000 and 3000).
- **Students who commenced from 2020 onwards** must complete a minimum of 40 units at 1000 and 2000 level and a minimum of 60 units at 3000 level.
- The duration of this program is 3 year full-time (40 units per semester) or part-time equivalent.
- The maximum time to complete this program is 8 years.

<sup>^</sup> **Note:** The Bachelor of Science includes a 10 unit MATH directed at 1000 level. This requirement is met in the Physics Major which allows for an additional 10 unit elective (50 units of electives in total) as shown in the Program Plan.



Some courses have assumed knowledge and/or requisites, please refer to the individual [Course Handbook](#). Please refer to the [Program Handbook](#) for specific information on program structure. If you are intending varying from this program plan please seek advice from your [Academic Program Advisor](#).

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## BACHELOR OF SCIENCE (Physics Major)

### PHYSICS MAJOR

#### COMPULSORY COURSES

Complete the following compulsory courses:

**MATH1110: Mathematics for Engineering, Science and Technology 1**  
**MATH1210: Mathematical Discovery 1**  
**PHYS1210: Advanced Physics I**  
**PHYS1220: Advanced Physics II**  
**MATH2310: Calculus of Science and Engineering**  
**PHYS2111: Classical Physics 1**  
**PHYS2112: Classical Physics 2**  
**PHYS2211: Modern Physics 1**  
**PHYS3111: Biophysics**  
**PHYS3112: Photonics**  
**PHYS3211: Quantum Information Science**

#### DIRECTED COURSES

Complete 10 units from:

**\*MATH2242: Complex Analysis**  
**MATH3820: Numerical Methods**

**\*If you have already completed MATH3242, this will count in place of MATH2242.**

*Courses removed from major, if you have already completed these courses, they still count towards your major:*

**MATH1210: Mathematics Discovery 1**  
**MATH1220: Mathematical Discovery 2**