

APPLIED PHYSICS, TESTAMUR MAJOR (T078)

Western Sydney University Major Code: T078

Previous Code: MT3047.1

Available to students in other Western Sydney University programs?
No

This testamur major is available as an elective major for Bachelor of Medical Science students only.

Applied Physics uses the principles and tools of physics to understand and manipulate the world around us, and covers fields as diverse as astrophysics, biophysics, magnetic resonance (i.e., NMR and MRI), medical physics, remote sensing, semiconductor physics, space science and much more. In this major, the core principles of physics, mathematics and computing are taught and used to study specific applications of physics. Students have access to world class facilities (e.g. telescopes and onsite ultra-high field MRI), and the expertise of international researchers. Graduates of this major possess skills in problem-solving and critical thinking together with deep knowledge of Physics. This flexible set of skills, applied across many disciplines, enables students to seek career opportunities confidently in teaching, research or industry, in diverse fields such as medical physics, materials science, energy, geoscience, aerospace, data science, finance and more.

Location

| Campus | Mode | Advice |
|---------------------|----------|---|
| Campbelltown Campus | Internal | Dr Narsimha Reddy (n.reddy@westernsydney.edu.au) |

Recommended Sequence

Select the link for your program below to see details of the major

Bachelor of Science

Qualification for the award of Bachelor of Science with a major in Applied Physics requires the successful completion of 240 credit points as per the recommended sequence below.

| Course | Title | Credit Points |
|-----------------------|------------------------|---------------|
| Year 1 | | |
| Autumn session | | |
| MATH 1014 | Mathematics 1A | 10 |
| NATS 1019 | Scientific Literacy | 10 |
| CHEM 1008 | Introductory Chemistry | 10 |
| PHYS 1002 | Physics 1 | 10 |
| Credit Points | | 40 |
| Spring session | | |
| PHYS 1006 | Physics 2 | 10 |
| MATH 1015 | Mathematics 1B | 10 |
| CHEM 1012 | Essential Chemistry | 10 |
| BIOS 1012 | Cell Biology | 10 |
| Credit Points | | 40 |
| Year 2 | | |
| Autumn session | | |
| MATH 2001 | Advanced Calculus | 10 |

| | | |
|----------------------------|---|------------|
| PHYS 2004 | The Cosmos in Perspective: Information and Life | 10 |
| Select two electives | | 20 |
| Credit Points | | 40 |
| Spring session | | |
| PHYS 3007 | Quantum Physics | 10 |
| NATS 3044 | Complex Case Studies in Science | 10 |
| Select two electives | | 20 |
| Credit Points | | 40 |
| Year 3 | | |
| Autumn session | | |
| PHYS 3006 | Classical Physics | 10 |
| NATS 3015 | Field Project 1 | 10 |
| Select two electives | | 20 |
| Credit Points | | 40 |
| Spring session | | |
| PHYS 3001 | Astroinformatics | 10 |
| PHYS 3008 | Biomedical Physics | 10 |
| Select two electives | | 20 |
| Credit Points | | 40 |
| Total Credit Points | | 240 |

Bachelor of Science (Pathway to Teaching Primary/Secondary)

Qualification for the award of Bachelor of Science with a major in Applied Physics requires the successful completion of 240 credit points as per the recommended sequence below.

| Course | Title | Credit Points |
|-----------------------|---|---------------|
| Year 1 | | |
| Autumn session | | |
| MATH 1014 | Mathematics 1A | 10 |
| NATS 1019 | Scientific Literacy | 10 |
| CHEM 1008 | Introductory Chemistry | 10 |
| PHYS 1002 | Physics 1 | 10 |
| Credit Points | | 40 |
| Spring session | | |
| PHYS 1006 | Physics 2 | 10 |
| MATH 1015 | Mathematics 1B | 10 |
| CHEM 1012 | Essential Chemistry | 10 |
| BIOS 1012 | Cell Biology | 10 |
| Credit Points | | 40 |
| Year 2 | | |
| Autumn session | | |
| MATH 2001 | Advanced Calculus | 10 |
| PHYS 2004 | The Cosmos in Perspective: Information and Life | 10 |
| Select two electives | | 20 |
| Credit Points | | 40 |
| Spring session | | |
| PHYS 3007 | Quantum Physics | 10 |
| NATS 3044 | Complex Case Studies in Science | 10 |
| Select two electives | | 20 |
| Credit Points | | 40 |

Year 3**Autumn session**

| | | |
|----------------------|-------------------|-----------|
| PHYS 3006 | Classical Physics | 10 |
| NATS 3015 | Field Project 1 | 10 |
| Select two electives | | 20 |
| Credit Points | | 40 |

Spring session

| | | |
|----------------------|--------------------|-----------|
| PHYS 3001 | Astroinformatics | 10 |
| PHYS 3008 | Biomedical Physics | 10 |
| Select two electives | | 20 |
| Credit Points | | 40 |

Total Credit Points **240**

In addition, all students must complete the mandatory 40 credit point minor in Education Studies.

Education Studies, Minor (<https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/education-studies-minor/>)

Students must meet this requirement by choosing the subjects from the minor in Education Studies as electives within their Bachelor of Science program.

Bachelor of Advanced Science

Qualification for the award of Bachelor of Advanced Science with a major in Applied Physics requires the successful completion of 240 credit points as per the recommended sequence below.

| Course | Title | Credit Points |
|-----------------------|---|---------------|
| Year 1 | | |
| Autumn session | | |
| MATH 1014 | Mathematics 1A | 10 |
| NATS 1019 | Scientific Literacy | 10 |
| CHEM 1008 | Introductory Chemistry | 10 |
| PHYS 1002 | Physics 1 | 10 |
| Credit Points | | 40 |
| Spring session | | |
| PHYS 1006 | Physics 2 | 10 |
| MATH 1015 | Mathematics 1B | 10 |
| CHEM 1012 | Essential Chemistry | 10 |
| BIOS 1012 | Cell Biology | 10 |
| Credit Points | | 40 |
| Year 2 | | |
| Autumn session | | |
| MATH 2001 | Advanced Calculus | 10 |
| PHYS 2004 | The Cosmos in Perspective: Information and Life | 10 |
| NATS 2001 | Advanced Science Project A | 10 |
| Select one elective | | 10 |
| Credit Points | | 40 |
| Spring session | | |
| PHYS 3007 | Quantum Physics | 10 |
| NATS 3044 | Complex Case Studies in Science | 10 |
| NATS 2002 | Advanced Science Project B | 10 |
| Select one elective | | 10 |
| Credit Points | | 40 |

Year 3**Autumn session**

| | | |
|----------------------|-------------------------------------|-----------|
| PHYS 3006 | Classical Physics | 10 |
| NATS 3043 | Advanced Science Research Project C | 10 |
| NATS 3015 | Field Project 1 | 10 |
| Select one elective | | 10 |
| Credit Points | | 40 |

Spring session

| | | |
|----------------------|-------------------------------------|-----------|
| PHYS 3001 | Astroinformatics | 10 |
| PHYS 3008 | Biomedical Physics | 10 |
| NATS 3043 | Advanced Science Research Project C | 10 |
| Select one elective | | 10 |
| Credit Points | | 40 |

Total Credit Points **240**

Related Programs

Bachelor of Advanced Science (3757) (<https://hbook.westernsydney.edu.au/archives/2021-2022/programs/bachelor-advanced-science/>)

Bachelor of Science (3754) (<https://hbook.westernsydney.edu.au/archives/2021-2022/programs/bachelor-science/>)

Bachelor of Science (Pathway to Teaching Primary/Secondary) (3756) (<https://hbook.westernsydney.edu.au/archives/2021-2022/programs/bachelor-science-pathway-teaching-primary-secondary/>)

Bachelor of Science/Bachelor of Arts (3763) (<https://hbook.westernsydney.edu.au/archives/2021-2022/programs/bachelor-science-bachelor-arts/>)

Bachelor of Science/Bachelor of Business (4748) (<https://hbook.westernsydney.edu.au/archives/2021-2022/programs/bachelor-science-bachelor-business/>)

Bachelor of Science/Bachelor of International Studies (3764) (<https://hbook.westernsydney.edu.au/archives/2021-2022/programs/bachelor-science-bachelor-international-studies/>)

Bachelor of Science/Bachelor of Laws (2743) (<https://hbook.westernsydney.edu.au/archives/2021-2022/programs/bachelor-science-bachelor-laws/>)

Diploma in Science/Bachelor of Science (6043) (<https://hbook.westernsydney.edu.au/archives/2021-2022/programs/diploma-science-bachelor-science/>)