

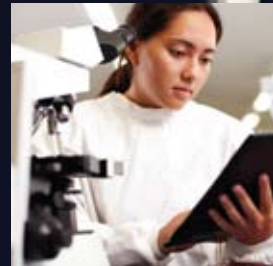


Curtin University

# CURTIN'S NEW BACHELOR OF SCIENCE

A COURSE STRUCTURE THAT  
OFFERS YOU MORE CHOICE,  
MORE OPTIONS AND  
MORE FLEXIBILITY

[scieng.curtin.edu.au](http://scieng.curtin.edu.au)



## IS SCIENCE IMPORTANT? JUST LOOK AROUND YOU!

WHERE HAVE COMPUTERS COME FROM? HOW HAVE WE FOUND CURES FOR MANY DISEASES AND VACCINES AGAINST OTHERS? HOW ARE WE LEARNING TO PROTECT OUR CROPS AND ENVIRONMENT? TO DECIDE WHAT FOOD IS SAFE TO EAT? TO MANAGE OUR FINITE RESOURCES? AND WHAT IS THE IMPACT OF POLLUTION? HOW SHOULD WE TACKLE THE PROBLEMS ASSOCIATED WITH CLIMATE CHANGE? OR WITH OUR EVER INCREASING DEMAND FOR ENERGY AND WATER?

To protect humanity, the environment and the economy, we need more well-educated scientists as well as many more people with a better understanding of science. The Curtin Bachelor of Science degree provides a great opportunity to develop relevant skill sets. You develop the necessary theoretical and practical skills in your chosen science areas of study, you gain invaluable insight into the importance and potential impact of science, and of related careers through interacting with our highly recognised teaching and research staff, and industry partners.

Our new Bachelor of Science degree, running for the first time in 2011, allows you to focus your study primarily in one area of science (a single major) such as Agriculture, Chemistry, Mathematics or Physics, or to study more than one area of Science by completing a combination

of majors. The new course structure provides you with greater flexibility – there is no pressure to choose your major(s) in your first year. You will complete one of four pre-major study packages in your first year allowing you to experience several fields of science before you commit to your preferred major or majors.

You will graduate with comprehensive proficiency and skills in your chosen areas of study, and will be well prepared for the workforce. You may also choose to undertake additional honours and postgraduate study at the completion of your degree to continue to further your knowledge.

### YOUR OPTIONS

Choose to complete a single or double major from the areas:

- **Agriculture** – Understand the processes involved in producing plants and animals for food, fibre and amenity purposes.
- **Applied Mathematics and Statistics** – Learn the advanced mathematics and statistics, and modelling techniques, that enable you to model and solve complex problems in areas such as engineering, health, finance and industry.
- **Biochemistry** – Straddle the interface between the disciplines of Biology and Chemistry and develop an understanding of the molecular level function of biological systems. Learn how to design, synthesise and detect molecules that interact with, and influence, biological function.
- **Chemistry** – Chemistry is often called ‘the central science’ because it impacts on so many other areas. Study the physical properties of molecular systems

and how the molecules interact. Design and synthesise molecules for specific function. Detect molecules in complex environments.

- **Coastal Zone Management** – Protect our aquatic environments by understanding and managing the effects of human activities on the coastal zone.
- **Environmental Biology** – Manage the world’s ecosystems and explore emerging environmental industries.
- **Physics** – Improve your understanding of the universe from the largest galaxies to the smallest subatomic particles, developing knowledge of core physics concepts, as well as skills in modern techniques of data acquisition and analysis, and the use of sophisticated instrumentation.

### OR

Choose a single, stand-alone major in:

- **Multidisciplinary Science** – Understand how various areas of science overlap or complement each other by combining rigorous study in more than one discipline area such as biology, chemistry, computing, geology, mathematics or physics.
- **Nanotechnology** – Engage with the science of the ‘very small’ and develop tiny, ultra-efficient processes and machines that will change the way we live.

### OR

Choose from our established double majors in:

- **Mathematical Science for Computing** – Apply your computing and mathematical skills to modelling and simulation tasks and software development.
- **Mathematical Sciences for Finances** – Develop a broad range of analytical and mathematical skills that are particularly relevant to statistical modelling and operations research in the finance field.

### YOUR FIRST STEP: CHOOSING A PRE-MAJOR

The Bachelor of Science has been structured so that you do not have to commit to a choice of major or majors in your first year of study. Instead you need only choose to complete one of four pre-majors that lead into our majors in your second year of study. These are:

- **Environment & Agriculture (E&A)**
- **Mathematical & Computational Sciences (M&CS)**
- **Multi-Disciplinary Science (M-DS)**
- **Physical Sciences (PS)**

Three of the pre-majors prepare you for study in a broad area of science. The fourth pre-major in Multi-disciplinary Science is a pre-requisite for the Multi-disciplinary major. The following table shows how the pre-majors relate to the majors we offer.

| Major                            | Suitable Pre-major |
|----------------------------------|--------------------|
| Agriculture                      | E&A                |
| Applied Mathematics & Statistics | M&CS               |
| Biochemistry                     | PS or E&A          |
| Chemistry                        | PS                 |
| Coastal Zone Management          | E&A                |
| Environmental Biology            | E&A                |
| Mathematics & Computing          | M&CS               |
| Mathematical Sciences & Finance  | M&CS               |
| Multidisciplinary Science        | M-DS or PS or E&A  |
| Nanotechnology                   | PS                 |
| Physics                          | PS                 |

Each pre-major offers you some choice of units (electives) to pursue topics of special interest to you. However, if you are thinking of completing more than one major, you need to make sure that you complete the pre-requisite units for both majors in the first year. This may reduce your flexibility in choosing electives. If you wish to focus on a single major, then you will also need to complete an extended major stream in that discipline area.

## THE BACHELOR OF SCIENCE HOW DOES IT WORK?

### EXAMPLE 1; SINGLE MAJOR

Single major:  
Bachelor  
of Science  
majoring in  
Chemistry

Year 1:  
Enrol in the  
Physical Science  
Pre-major –  
complete the  
Chemistry units

Year 2 & 3:  
Enrol in the  
Chemistry major  
(Extended stream)

For more information about the Bachelor of Science, available majors and the pre-majors, visit: [courses.curtin.edu.au/course\\_overview/undergraduate/science-computing](http://courses.curtin.edu.au/course_overview/undergraduate/science-computing)

### EXAMPLE 2; DOUBLE MAJOR

Double major:  
Bachelor  
of Science  
majoring in  
Chemistry and  
Agriculture

Year 1:  
Enrol in either the  
Physical Science  
Pre-major or the  
Environmental and  
Agriculture Pre-  
major – complete  
both the Chemistry  
and Agriculture  
related units.

Year 2 & 3:  
Enrol in both the  
Agriculture and  
Chemistry majors



# THE NEW BACHELOR OF SCIENCE (cont)



## DURATION

Three years full-time study or equivalent part-time.

## INTAKES

February and July.

## ENTRY REQUIREMENTS

### LOCAL STUDENTS

Standard University admission requirements apply. Some majors have additional entry requirements as outlined in the table below

| Major  | Pre-requisites  |
|--|---|
| Agriculture<br>Coastal Zone Management<br>Environmental Biology                                | No additional pre-requisites  |
| Muti-Disciplinary Science  | Mathematics 2C/2D and at least one TEE science subject or science course of study at level 3A/3B  |
| Biochemistry<br>Chemistry  | TEE Applicable Mathematics or Mathematics 3C/3D and TEE Chemistry or Level 3A/3B in Chemistry   |
| Applied Mathematics & Statistics<br>Mathematical Sciences & Finance<br>Mathematics & Computing | TEE Applicable Mathematics or Mathematics 3C/3D or Mathematics: Specialist 3C/3D  |
| Nanotechnology<br>Physics  | TEE Applicable Mathematics or Mathematics 3C/3D or Mathematics: Specialist 3C/3D, and TEE or Level 3A/3B in Biology, Chemistry or Physics |

## SPECIAL REQUIREMENTS

The STAT is accepted for entry into the BSc only for those students undertaking the following majors: Agriculture, Coastal Zone Management, Environmental Biology and

Multidisciplinary Science. Major elements E, V and Q are considered. It may be used to meet University English competency requirements combined with other relevant qualifications.

## OTHER COURSES IN SCIENCE

If you are interested in studying science, Curtin also offers stand-alone Bachelor of Science degrees in a diverse and interesting range of disciplines which include: Actuarial Science, Astronomy, Medical Imaging Science, Environmental Science and Viticulture & Oenology.

**For more information about studying at Curtin, visit [prospective.curtin.edu.au](http://prospective.curtin.edu.au)**

## INTERNATIONAL STUDENTS

International students studying in Australia on a student visa can only study full-time and there are also specific entry requirements that must be met. Please refer to [international.curtin.edu.au](http://international.curtin.edu.au) or phone +61 8 9266 7331 for further information, as some information contained in this booklet may not be applicable to international students. Australian citizens, permanent residents and international students studying outside Australia have the choice of full-time, part-time and external study.

## SCIENCE AND ENGINEERING ENABLING COURSE

For students who do not meet Curtin University's entrance requirements, you can complete the Science and Engineering Enabling course. This preparatory course enables you to meet university entrance requirements and complete required prerequisites for entry into Curtin's engineering, science, health and information technology courses. It may also qualify you for direct admission to some of these courses.

## For more information:

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Perth Western Australia 6845  
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