



## SCIENCE AND MATHEMATICS

Avondale lecturers know that Christianity and science are not incompatible. Our science courses explore the interaction between a scientific understanding of the natural world and a Christian faith and world view.

Avondale's science classes offer personalised academic tuition. Our staff take a genuine interest in their students' development. Many Avondale science students also obtain industry work experience before graduation.

Avondale's three-year **Bachelor of Science (BSc)** degree prepares graduates for a large range of careers in science. Students are encouraged to pursue postgraduate study and further research. Our degrees have a strong track record in leading to Masters degrees and PhDs. There is also strong employment in science- and mathematics- related industries.

The BSc can also be taken as a combined degree with another Avondale qualification:

### **Education**

The four-year BSc/BTch prepares graduates to teach secondary school science or mathematics classes. Australia currently faces significant shortages of science and mathematics teachers.

The BSc can also articulate into **Pathology:**

Our three-year BSc, with appropriate biomedical unit choices, allows entry to Charles Sturt University's final year of the Bachelor of Medical Science (Pathology), qualifying graduates to work in any pathology laboratory.

### **Major areas of Scientific Study:**

Biological Science – Biomedical, Biological Science – Environmental, Chemistry, Food and Nutrition, Geography, Mathematics, Physics and Psychology.



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### CAREERS IN SCIENCE AND MATHEMATICS

The three-year Bachelor of Science (BSc) degree has led many students into research and a higher degree. It is also an ideal path to a degree in medical science or allied health, or some other postgraduate qualification now offered by many universities.

Science classrooms are fun but there are just not enough teachers. Teaching creates opportunities to make a difference in young lives. With our long history of producing quality teachers, Avondale's science and mathematics graduates are in great demand.

Are you interested in pathology or other work in medical laboratories? The Biomedical Science major in our BSc degree gives you entry to the final year of the BMedSc (Pathology) degree at Charles Sturt University, Wagga Wagga campus. In four years you gain two degrees and full accreditation as a medical laboratory scientist.

Are you interested in psychology or the counselling profession? Students can study a specialisation in psychology through the University of New England by distance education as part of their BSc at Avondale.

### WHERE IT COULD TAKE YOU

- Scientific Research
- Science or Mathematics Teaching
- Medical Laboratory Science (Pathology)
- Information Technology
- Product Development
- Quality Control
- Environmental Science
- Nutrition and Dietetics
- Industrial Laboratory Science
- Medicine
- Public Service
- Insurance
- Sales/Management/Marketing
- Clinical Psychology

### WHY SCIENCE AT AVONDALE?

- Studies within a Christian context
- Smaller class sizes
- Large range of instructional strategies
- Industry experience
- Links to nearby university campuses
- Strong laboratory component
- Staff dedicated to assisting students to achieve personal excellence

### COURSE OPTIONS

For students interested in studying Science and Mathematics, Avondale offers the following options:

1. **Bachelor of Science (BSc)**: a three-year degree.
2. **Bachelor of Science/Bachelor of Teaching (BSc/BTch)**: a four-year combined degree.
3. Articulation into **Pathology** with Charles Sturt University



Course Name:

## BACHELOR OF SCIENCE (BSc)

Degree Type: Undergraduate  
 Locations Offered: Lake Macquarie Campus  
 Study Mode: Full-time or part-time on campus  
 NB. Human Cytogenetics and Psychology are studied by distance education.  
 Course Duration: Three years full-time (or part-time equivalent)

ENTRY Requirements:

Direct Entry: ATAR of 63.00+ (or equivalent eg.OP of 17 or less).

The following majors have specific entry requirements:

### Biological Science

1. A HSC Science unit or equivalent and Chemistry Bridging Course, OR
2. Recommendation of the Faculty of Science and Mathematics.
3. HSC Biology or equivalent is recommended.

### Chemistry

1. HSC Chemistry or equivalent, or recommendation of the Faculty of Science and Mathematics, AND
2. HSC Mathematics or equivalent, or recommendation of the Faculty of Science and Mathematics.

### Food and Nutrition

1. A HSC Science unit or equivalent and Chemistry Bridging Course, OR
2. Recommendation of the Faculty of Science and Mathematics.
3. HSC Biology or equivalent is recommended.

### Mathematics

Recent HSC Mathematics Extension 1 or equivalent, or recommendation of the Faculty of Science and Mathematics.

### Physics

1. HSC Physics or equivalent, or recommendation of the Faculty of Science and Mathematics, AND
2. HSC Mathematics Extension 1, or equivalent, or recommendation of the Faculty of Science and Mathematics.

Alternative Entry:

Students with an ATAR below 63.00 (or equivalent) may still be able to gain entry into this degree on a conditional basis. Previous work experience and educational qualifications will also be considered for each student upon application. For further information on alternative pathways into a course visit the Avondale website [www.avondale.edu.au/future\\_students::Admission\\_Requirements/](http://www.avondale.edu.au/future_students::Admission_Requirements/)

### GENERAL INFORMATION

The Bachelor of Science degree is designed to provide a tertiary science qualification in the context of Christian values. This degree prepares science professionals for industry, business or postgraduate study and ongoing research. It can also prepare graduates for responsible ethical leadership in our science-driven culture.

### COURSE STRUCTURE SUMMARY

The BSc consists of 24 x 6 credit point units (144 credit points) over six semesters. The following six modes of study are possible:

- Mode 1 Two majors plus other units.
- Mode 2 Two majors plus one minor plus other units.
- Mode 3 One major plus two minors (at least one Science minor) plus other units.
- Mode 4 One major plus one minor plus other units.
- Mode 5 Psychology specialisation plus two Science minors plus other units.
- Mode 6 Psychology specialisation plus one major plus other units.

The two most common modes, one and three, are shown below.

#### STUDY MODE ONE: DOUBLE MAJOR

Component of course	Credit points
Christian Studies units	18
Major 1	48
Major 2	48
Electives	30
<b>TOTAL</b>	<b>144</b>

#### STUDY MODE THREE: ONE MAJOR, TWO MINORS

Component of course	Credit point
Christian Studies units	18
Major 1	48
Minor 1	24
Minor 2	24
Required units/Electives	30
<b>TOTAL</b>	<b>144</b>



### CHRISTIAN STUDIES UNITS

In the course it is a requirement that Christian Studies units are completed. These units address the religious, ethical and social values emphases of Avondale's philosophy of education derived from its Christian/Seventh-day Adventist faith tradition.

CSTD14300	Christian Studies I
CSTD24300	Christian Studies II*#
SCSP34300	Scientific Perspectives in the Modern World

\*SDA students may select the following alternative to CSTD24300:

THCH16500	SDA History and Ministry of Ellen White
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#The following alternatives to CSTD24300 are available to students of other faiths:

BBNT16000	Gospels A
BBNT17000	Epistles A
ENGL21000	The Bible as Literature
ENGL25000	Literature and Religion (odd years)
THWR36200	Comparative Religions

All students may substitute an approved unit from the Faculty of Theology for either CSTD14300 or CSTD24300.

### MAJORS

The BSc major is an approved sequence in a specific science discipline or multi-discipline area comprised of at least 8 units (48 credit points).

Majors are available in the following areas:

- Biological Science – Biomedical Major
- Biological Science – Environmental Major
- Chemistry
- Food and Nutrition (requires a Biological Science minor)
- Geography
- Mathematics
- Physics
- Psychology

### MINORS

The BSc minor is an approved sequence in a different science discipline area to that chosen for the major, comprised of at least 4 units (24 credit points).

Minors are available in the following areas:

- Biological Chemistry
- Biological Science – Biomedical major
- Biological Science – Environmental major
- Chemistry
- Food and Nutrition (requires a Biological Science minor)
- Geography
- Information Technology
- Mathematics
- Physics
- Psychology

### REQUIRED UNITS

Required units are the prerequisites/corequisites for a major or minor that are not part of that major or minor sequence of units.

Biological Chemistry

BIOL16000	Biology I
BIOL16100	Comparative Functional Biology
BIOL26100	Biochemistry

Biological Science–Environmental

MATH16200	Introduction to Statistics
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Biological Science–Biomedical

CHEM16000	Chemistry IA <u>OR</u>
CHEM16300	General Chemistry <u>OR</u>
CHEM16100	Chemistry IB

Chemistry

MATH16000	Mathematics IA <u>OR</u>
MATH16400	General Mathematics

Food and Nutrition/Biological Science

CHEM16000	Chemistry IA <u>OR</u>
CHEM16300	General Chemistry



#### Medical Laboratory Science (Pathology) sequence

ICTM16400	Introduction to Information Management
MATH16000	Mathematics IA <u>OR</u>
MATH16400	General Mathematics
MATH16200	Introduction to Statistics
PHYS16300	General Physics <u>OR</u>
PHYS16000	Physics IA
BMS242	Human Cytogenetics (CSU)
CHEM2XX00	200-level Chemistry

#### Physics

MATH16000	Mathematics IA
MATH16100	Mathematics IB
MATH26000	Calculus II

#### Psychology

Statistics study already part of specialisation

#### SPECIALISATION

A BSc specialisation (study modes 5 and 6) is available only in the field of psychology and is an approved sequence of 10 units (60 credit points) studied by distance education through the University of New England (UNE). This sequence is accredited with the Australian Psychology Accreditation Council (APAC) and if adequate grades are obtained may lead on to an honours year and subsequent qualifications in clinical psychology.

#### ELECTIVES

Electives are undergraduate units which may be chosen from the areas listed for major and minor studies in the BSc as well as other approved undergraduate units.

No more than 12 credit points of electives outside the sciences may be taken. Electives should be chosen so that no more than 60 credit points of 100-level units are studied in the degree. Electives may be restricted if prerequisites are required for the major/minor sequences. The Head of the School of Science and Mathematics or the BSc Strand Convenor should be consulted regarding the choice of electives, particularly those outside the major/minor sequences, as not all units may be taken.

#### ARTICULATIONS WITH OTHER INSTITUTIONS

##### > Food and Nutrition Major – The University of Newcastle units

A memorandum of agreement exists between the School of Science and Mathematics (Avondale) and the School of Science and Technology (The University of Newcastle Central Coast Campus). Avondale College students who have successfully completed the science units across the first four semesters shown in the Nutrition Major/Biological Science Minor Structure will be eligible to enrol in the University of Newcastle units shown in semesters 5 and 6 of the same structure.

##### > Bachelor of Medical Science (Pathology) – Charles Sturt University

A memorandum of understanding exists between the School of Science and Mathematics (Avondale) and the School of Biomedical Sciences (Charles Sturt University). Avondale Bachelor of Science (Biological Sciences – Biomedical major and Biological Chemistry minor) graduates who have successfully completed the Charles Sturt University distance unit BMS242 while at Avondale are eligible to enrol in the Charles Sturt University Bachelor of Medical Science (Pathology) and complete this degree after an additional year of full-time study.

##### > Bachelor of Science (Psychology) - The University of New England

A memorandum of understanding exists between Avondale and The University of New England, whereby Avondale students enrol in the psychology specialisation by distance mode as a component of their Avondale degree.

#### FIELD STUDY

Avondale is well located for the study of geography and field biology, situated within a few kilometres of coastal sand dunes, mangroves, coastal lakes, fresh water aquatic environments, and warm temperate sub-tropical forests.

Frequent trips are taken to areas of geographical and biological interest, including interstate excursions.

#### WORK EXPERIENCE

Avondale is located adjacent to the Sanitarium Health Food Company laboratories which provide an excellent opportunity for students to gain recognised work experience during their course of study. Bachelor of Medical Science students may find work at Sydney Adventist Hospital or other hospital pathology laboratories.



## MAJOR AND MINOR UNIT SEQUENCES

### > Biological Science

Biological Science–Environmental major:

- BIOL16000 Biology I
- BIOL16100 Comparative Functional Biology
- BIOL26200 Ecology
- BIOL26300 Mammalogy
- BIOL26600 Ecophysiology of Animals (even years)
- BIOL36200 Plant Biology (odd years)
- BIOL36600 Conservation Ecology (even years)
- BIOL36800 Marine Biology

Note: Advised electives with this major:

- MATH16200 Introduction to Statistics

Biological Science–Environmental major electives:

- BIOL26100 Biochemistry
- BIOL39000 Seminar in Biology
- GEOP33000 Biogeography

Biological Science–Environmental minor:

- BIOL16000 Biology I
- BIOL16100 Comparative Functional Biology
- BIOL26200 Ecology

and one of

- BIOL26300 Mammalogy
- BIOL36200 Plant Biology (odd years)
- BIOL36600 Conservation Ecology (even years)
- BIOL36800 Marine Biology

Biological Science–Biomedical major:

- BIOL16000 Biology I
- BIOL16100 Comparative Functional Biology
- BIOL26000 General Human Physiology
- BIOL26100 Biochemistry
- BIOL26400 General Microbiology
- BIOL36000 Investigative Biochemistry (odd years)
- BIOL36400 Advanced Human Physiology
- BIOL36500 Molecular Biology (even years)

Biological Science–Biomedical major electives:

- BIOL39000 Seminar in Biology
- HPPD30100 Exercise Physiology

Biological Science–Biomedical minor:

- BIOL16000 Biology I
- BIOL16100 Comparative Functional Biology

and any two of:

- BIOL26000 General Human Physiology
- BIOL26100 Biochemistry
- BIOL26400 General Microbiology

Biological Chemistry minor:

- BIOL26700 Histotechniques (odd years)
- BIOL35800 Clinical Biochemistry (even years)
- CHEM16000 Chemistry IA OR
- CHEM16300 General Chemistry
- CHEM16100 Chemistry IB

### > Chemistry

Chemistry major:

- CHEM16000 Chemistry IA
- CHEM16100 Chemistry IB
- CHEM21000 Organic Chemistry (even years)
- CHEM26000 Physical and Inorganic Chemistry IIA (odd years)
- CHEM26100 Physical and Inorganic Chemistry IIB (odd years)
- CHEM31000 Advanced Organic Chemistry (even years)
- CHEM32500 Solid State Chemistry and Spectroscopy (odd years)
- CHEM32600 Environmental Chemistry (odd years)

Chemistry major electives:

Additional units for the major can be chosen from the following:

- CHEM21500 Biomolecular Chemistry (even years)
- CHEM32700 Organometallic and Bioinorganic Chemistry (even years)
- CHEM32800 Food Chemistry (even years)
- CHEM39000 Seminar in Chemistry

Chemistry minor:

- CHEM16000 Chemistry IA OR
- CHEM16300 General Chemistry
- CHEM16100 Chemistry IB

and at least two of the following:

- CHEM21000 Organic Chemistry (even years)
- CHEM21500 Biomolecular Chemistry (even years)
- CHEM26000 Physical and Inorganic Chemistry IIA (odd years) (requires CHEM16000)
- CHEM26100 Physical and Inorganic Chemistry IIB (odd years) (requires CHEM16000)



### > Food and Nutrition

*Units in italics offered by arrangement with The University of Newcastle.*

Food and Nutrition major:

- DTFN11100 Food, Nutrition and Health
- DTFN21100 Food Production Systems
- HPFH20100 Nutrition, Development and Performance
- DTFN21200 Food Science and Innovation
- FSHN3010 Food Processing and Quality Management*
- DTFN31100 Food Industry Experience OR
- FSHN3080 Professional Practice*
- DTFN31200 Food Product Design Project OR
- FSHN3210 Food Product Development*
- HPFH36300 Health Promotion OR
- BIOL37000 Food Microbiology OR
- FSHN3420 Food Packaging OR*
- FSHN3100 Research Methods*

Food and Nutrition electives (*units from The University of Newcastle, timetable permitting*):

- CHEM32800 Food Chemistry
- FSHN3070 Functional Food and Health Claims*
- FSHN3100 Research Methods*
- FSHN3230 Food Analysis*
- FSHN3420 Food Packaging*

Note: It is mandatory that a Food and Nutrition major be studied in association with an appropriate Biological Science minor.

Food and Nutrition minor:

- DTFN11100 Food, Nutrition and Health
- DTFN21100 Food Production Systems

*and two of:*

- DTFN21200 Food Science and Innovation
- DTFN31200 Food Product Design Project
- HPFH20100 Nutrition, Development and Performance
- HPFH36300 Health Promotion

Note: It is mandatory that a Food and Nutrition minor be studied in association with appropriate Biological Science units. See the Head of School for details

### > Geography

Geography major

- GEOH11000 Global Issues and Humanitarian Responses
- GEOH12000 Environmental Issues
- GEOH23000 Asia Pacific in the Global Economy
- GEOH35000 Development Geography
- GEOH36000 Urban Places and Society
- GEOH21000 Physical Geography A
- GEOH22000 Physical Geography B
- GEOH33000 Biogeography

Geography elective:

- GEOH24000 Asian Fieldwork (not offered every year)

Geography minor:

- GEOH11000 Global Issues and Humanitarian Responses
- GEOH12000 Environmental Issues

*and at least two of the following:*

- GEOH24000 Asian Fieldwork
- GEOH23000 Asia Pacific in the Global Economy
- GEOH21000 Physical Geography A
- GEOH22000 Physical Geography B

Physical Geography minor:

- GEOH12000 Environmental Issues
- GEOH21000 Physical Geography A
- GEOH22000 Physical Geography B
- GEOH33000 Biogeography

### > Information Technology

Information Technology minor

The Head of the School of Science and Mathematics should be consulted regarding the choice of appropriate units.



### > Mathematics

Mathematics major:

- MATH16000 Mathematics IA
- MATH16100 Mathematics IB
- MATH26000 Calculus II
- MATH26100 Algebra II
- MATH26200 Statistics II (odd years)
- MATH36100 Algebra III
- MATH36200 Mathematical Analysis (even years)
- MATH36300 Advanced Mathematical Methods

Additional Mathematics electives:

- MATH26300 Numerical Analysis (even years)
- MATH36000 Calculus III (odd years)
- MATH39000 Seminar in Mathematics

Mathematics minor:

- MATH16000 Mathematics IA
- MATH16100 Mathematics IB
- MATH26000 Calculus II

and at least one of:

- MATH26100 Algebra II
- MATH26200 Statistics II (odd years)
- MATH26300 Numerical Analysis (even years)

### > Physics

*Units in italics are offered by arrangement with The University of Newcastle.*

Physics major:

- PHYS16000 Physics IA
- PHYS16100 Physics IB
- PHYS22500 Classical Physics and Special Relativity*
- PHYS26100 From Quantum to Quark
- PHYS22600 Electromagnetism*
- PHYS36300 Electronics Applications

and any two of the following:

- PHYS32900 Special Relativity*
- PHYS33100 Lasers and Applications*
- PHYS33500 Quantum, Atomic and Molecular Physics*
- PHYS33900 Solid State and Nanoscience*

Physics electives:

- PHYS36100 Quantum Physics (odd years)
- PHYS39000 Seminar in Physics

Physics minor:

- PHYS16000 Physics IA
- PHYS16100 Physics IB
- PHYS26100 From Quantum to Quark
- PHYS26300 Electronics and Data Acquisition

### > Psychology

Psychology specialisation (by distance education through The University of New England)

- PSYC101 Introductory Psychology I
- PSYC102 Introductory Psychology II
- PSYC200 Social Psychology
- PSYC202 Research Methods and Statistics
- PSYC206 Cognitive Psychology
- PSYC213 Lifespan Development Psychology
- PSYC301 Psychological Testing
- PSYC302 Advanced Research Methods and Statistics
- PSYC366 Biopsychology

and at least one of the following:

- PSYC304 Health Psychology
- PSYC309 Human Neuropsychology
- PSYC316 Perception and Perceptual Impairment
- PSYC321 Psychology of Language
- PSYC363 Psychopathology
- PSTC399 Special Topics in Psychological Research



**BACHELOR OF SCIENCE - 1 MAJOR, 2 MINORS (TYPICAL SEQUENCE)**

**YEAR ONE**

*Semester 1*

MAJOR 100  
 1st MINOR 100  
 ELECTIVE  
 2nd MINOR 100

*Semester 2*

MAJOR 100  
 1st MINOR 100  
 CHRISTIAN STUDIES I  
 2nd MINOR 100

**YEAR TWO**

*Semester 3*

MAJOR 200  
 MAJOR 200/300  
 1st MINOR 200  
 2nd MINOR 200

*Semester 4*

MAJOR 200/300  
 1st MINOR 200  
 CHRISTIAN STUDIES II  
 2nd MINOR 200

**YEAR THREE**

*Semester 5*

MAJOR 200/300  
 MAJOR 200/300  
 SCIENCE ELECTIVE 200/300  
 SCIENCE ELECTIVE 200/300

*Semester 6*

MAJOR 300  
 SCIENCE ELECTIVE 200/300  
 CHRISTIAN STUDIES III  
 ELECTIVE

**BACHELOR OF SCIENCE - DOUBLE MAJOR (TYPICAL SEQUENCE)**

**YEAR ONE**

*Semester 1*

1st MAJOR 100  
 ELECTIVE  
 SCIENCE ELECTIVE  
 2nd MAJOR 100

*Semester 2*

1st MAJOR 100  
 ELECTIVE  
 CHRISTIAN STUDIES I  
 2nd MAJOR 100

**YEAR TWO**

*Semester 3*

1st MAJOR 200  
 1st MAJOR 200/300  
 2nd MAJOR 200  
 2nd MAJOR 200/300

*Semester 4*

1st MAJOR 200/300  
 SCIENCE ELECTIVE 200  
 CHRISTIAN STUDIES II  
 2nd MAJOR 200/300

**YEAR THREE**

*Semester 5*

1st MAJOR 200/300  
 1st MAJOR 200/300  
 2nd MAJOR 200/300  
 2nd MAJOR 200/300

*Semester 6*

1st MAJOR 300  
 SCIENCE ELECTIVE 200/300  
 CHRISTIAN STUDIES III  
 2nd MAJOR 300



Course Name:

**BACHELOR OF SCIENCE/BACHELOR OF TEACHING (BSc/BTch)**

Degree Type: Undergraduate  
 Locations Offered: Lake Macquarie Campus  
 Study Mode: Full-time or part-time on campus  
 Course Duration: Four years full-time (or part-time equivalent)

ENTRY Requirements:

Direct Entry:

- ATAR of 63.00+ (or equivalent eg.OP of 17 or less).

Note: See page 4 for entry requirements for specific majors

Alternative Entry:

Students with an ATAR below 63.00 (or equivalent) may still be able to gain entry into this degree on a conditional basis. Previous work experience and educational qualifications will also be considered for each student upon application. For further information on alternative pathways into a course visit the Avondale website [www.avondale.edu.au/future\\_students::Admission\\_Requirements/](http://www.avondale.edu.au/future_students::Admission_Requirements/)

**GENERAL INFORMATION**

The Bachelor of Science/Bachelor of Teaching combines professional studies in education with studies in appropriate Bachelor of Science disciplines that will equip graduates for secondary teaching.

**COURSE STRUCTURE SUMMARY**

The BSc/BTch degree consists of a minimum of 192 credit points. The course is comprised of Christian Studies units, Majors, Minors, BSc Electives, Education units, Curriculum Studies units and Professional Experience.

**SUMMARY OF MINIMUM REQUIREMENTS IN BSc/BTch**

Component of course	Credit points
Christian Studies units	18
BSc Major	48
BSc Minor	24
BSc Electives	18
Education units	36
Curriculum Studies units	12
Professional Development and Experience	36
<b>TOTAL</b>	<b>192</b>

**CHRISTIAN STUDIES UNITS**

These units address the religious, ethical and social value emphases within Avondale's philosophy of education derived from its Seventh-day Adventist faith tradition.

In the BSc/BTch degree the sequence is:

- EDUC14300 Christian Studies for Teachers I
- EDUC24300 Christian Studies II\*
- EDUC34300 Christian Studies for Teachers III –  
Philosophy of Christian Education

\*All students may substitute an approved unit from the Faculty of Theology for CSTD24300. Such units include:

- BBNT16000 Gospels A
- BBNT17000 Epistles A
- ENGL21000 The Bible as Literature
- ENGL25000 Literature and Religion (odd years)



## MAJORS AND MINORS

The major consists of at least 8 units (48 credit points) and the minor consists of at least 4 units (24 credit points). These majors and minors may be selected from the following:

- Biology (Special sequence - see Handbook)
- Chemistry
- Food and Nutrition (Special sequence - see Handbook)
- Geography
- Information Technology (Minor only)
- Mathematics
- Physics

A major constitutes a first teaching field and a minor a second teaching field.

## INSTITUTE OF TEACHERS (NSW) REQUIREMENTS FOR ACCREDITATION AS A SCIENCE TEACHER

1. Students studying Biology as a major or minor are required to study at least two units in Chemistry or two units in Physics in their degree to qualify for a first or second teaching field in Biology.

2. Students studying Chemistry as a major or minor are required to study at least two units in Biology or two units in Physics in their degree to qualify for a first or second teaching field in Chemistry.

3. Students studying Physics as a major or minor are required to study at least two units in Biology or two units in Chemistry in their degree to qualify for a first or second teaching field in Physics.

## BSc ELECTIVES

These electives may be chosen from all the areas listed for major and minor studies in the BSc. Electives should be chosen after consultation with the Strand Convenor to provide units relevant to a teaching field.

## EDUCATION UNITS

EDUC15600	Literacy in Education
EDUC21600	Computers, Learning and Practitioner-based Research
EDUC26000	Theories of Development and Learning
EDUC29500	Multicultural Education and Indigenous Studies
EDUC30000	Individual Differences and the Atypical Child
EDUC 37500	Science in Education

## CURRICULUM STUDIES UNITS

Curriculum Studies units focus on content and methods of teaching for the various teaching fields/specialisations in the secondary school curriculum. Students are familiarised with both NSW State and Seventh-day Adventist syllabus documents, with the intention that they should be prepared to teach competently in either government, independent, or church-related schools. The Curriculum Studies in particular discipline areas (units with EDCZ codes) are required for both the first and second teaching fields.

## PROFESSIONAL EXPERIENCE

The Professional Development and Experience units address the teaching strategies, skills and practices involved in teaching in the secondary classroom, and provide opportunities for continuous school-based professional experience, offering increased responsibilities within a variety of school settings, for periods of two to six weeks at a time. Students are involved in a total of 95 days of professional experience including 10 days of experiential learning.

EDSP17000	Professional Development and Experience IA
EDSP17100	Professional Development and Experience IB
EDSP27000	Professional Development and Experience II
EDSP37000	Professional Development and Experience III
EDSP37500	Professional Development and Experience IVA
EDSP37600	Professional Development and Experience IVB

## STATE REGISTRATION REQUIREMENTS

Endorsement of Avondale's Teacher Education courses by the New South Wales Institute of Teachers qualifies graduates of the course for employment as teachers in the NSW State public system. Other Australian state governments have different requirements for teachers to become registered to teach in state schools, but normally registration in one state is considered as meeting the requirements for other states.

Information concerning certification requirements is available from the Dean of the Faculty of Education. Students are advised to familiarise themselves with these requirements as responsibility for registration as a teacher rests with the student. This is particularly important for secondary education students.

## SELF-DISCLOSURE AND CRIMINAL RECORD CHECK

Current legislation requires Avondale students who will be engaged in professional experience involving children or young people to sign a self-disclosure form (Prohibited Persons Declaration) and consent to a criminal record check. All Avondale teacher education students are required to undergo these checks.



## BACHELOR OF SCIENCE/BACHELOR OF TEACHING STANDARD STRUCTURE (TYPICAL SEQUENCE)

### YEAR ONE

#### Semester 1

	BSc MAJOR 100
	BSc MINOR 100 OR BSc PREREQUISITE
EDUC15600	LITERACY IN EDUCATION
EDSP17000	PROFESSIONAL DEVELOPMENT AND EXPERIENCE IA

>> PROFESSIONAL EXPERIENCE (JULY, 3 WEEKS)

#### Semester 2

	BSc MAJOR 100
	BSc MINOR 100
EDUC14300	CHRISTIAN STUDIES FOR TEACHERS I
EDSP17100	PROFESSIONAL DEVELOPMENT AND EXPERIENCE IB

### YEAR TWO

#### Semester 3

	BSc MAJOR 200
	BSc MINOR 100 OR 200
EDUC26000	THEORIES OF DEVELOPMENT AND LEARNING
EDSP27000	PROFESSIONAL DEVELOPMENT AND EXPERIENCE II

>> PROFESSIONAL EXPERIENCE (JULY, 3 WEEKS)

#### Semester 4

	BSc MAJOR 200
	BSc MAJOR 200
CSTD24300	CHRISTIAN STUDIES II
EDUC29500	MULTICULTURAL EDUCATION AND INDIGENOUS STUDIES

### YEAR THREE

#### Semester 5

	BSc MAJOR 300
	BSc MINOR 200
	CURRICULUM STUDIES MAJOR/MINOR 200
EDSP37000	PROFESSIONAL DEVELOPMENT AND EXPERIENCE III

>> PROFESSIONAL EXPERIENCE (JULY, 3 WEEKS)

#### Semester 6

	BSc MAJOR 300
	BSc ELECTIVE OR BSc MINOR 200
	CURRICULUM STUDIES MAJOR/MINOR 200
EDUC21600	COMPUTERS, LEARNING AND PRACTITIONER-BASED RESEARCH

### YEAR FOUR

>> PROFESSIONAL EXPERIENCE (FEBRUARY, 2 WEEKS)

#### Semester 7

	BSc MAJOR 300
	BSc ELECTIVE 200/300
	BSc ELECTIVE/ADDITIONAL CURRICULUM STUDIES
EDSP37500	PROFESSIONAL DEVELOPMENT AND EXPERIENCE IVA

>> PROFESSIONAL EXPERIENCE (JULY-AUGUST, 6 WEEKS)

#### Semester 8

EDUC34300	CHRISTIAN STUDIES III
EDUC30000	INDIVIDUAL DIFFERENCES AND THE ATYPICAL CHILD
EDUC37500	SCIENCE IN EDUCATION
EDSP37600	PROFESSIONAL DEVELOPMENT AND EXPERIENCE IVB



### **CREDIT TRANSFER AND ADVANCED STANDING**

Avondale has a formal process for the assessment of transfer credit. Requests for credit on the basis of prior learning or experience must be sent to the Course Convenor, supported by official documentation from the institution or organisation where the prior learning/experience occurred. Documentation will normally be in the form of an original copy of an official academic transcript (in English) supported by unit outlines and any other relevant documentation. The Faculty or School Learning and Teaching Committee decides on credit to be granted on the basis of prior learning.

The maximum amount of credit that may be granted is normally no greater than 50% of the course.

Block credit may also be available to students who have completed a block of units that comprise part of a course at a recognised higher education institution.

See Avondale's Undergraduate Handbook or Avondale's website for more detailed information on credit transfer and advanced standing.

### **ALTERNATIVE ENTRY**

Decisions on alternative pathways to admission are made by the Academic Registrar in consultation with the relevant Course Convenor and other appropriate personnel. Alternative admission may be obtained by one or more of the following methods:

- Previous post-secondary qualifications
- Special Tertiary Admissions Test (STAT)
- Special Consideration (disadvantaging factors impacting on Year 12 results).

Detailed information on alternative admission is available from Avondale's Enquiry & Enrolment Centre, the Avondale Handbook, or the website.

### **ARTICULATION ARRANGEMENTS WITH THE UNIVERSITY OF NEWCASTLE**

Formal arrangements are in place for Avondale Bachelor of Science graduates with appropriate majors to proceed to postgraduate studies at the University of Newcastle in the following fields: Biology, Chemistry, Mathematics, Physics, Geography, Scientific Studies, Environmental Studies, Environmental and Business Management.

### **ADDITIONAL ENTRY REQUIREMENTS FOR INTERNATIONAL APPLICANTS**

Applicants from a country where English is not the first language will need to demonstrate proficiency in English to enter a degree course. This may be done in one of the following ways:

1. Provide documentary evidence at the time the application is lodged that all secondary schooling was conducted in the English language AND evidence of a satisfactory pass in English in a British O-level examination or local equivalent; or
2. Provide documentary evidence at the time the application is lodged of a satisfactory pass in the standardised IELTS test with a score of 6.5 or better, with no individual band score less than 6.0 for all courses in all Faculties except courses in the Faculty of Education which require a minimum IELTS score of 7.5 in each category; or
3. Provide documentary evidence at the time the application is lodged of a satisfactory pass in the standardised TOEFL test at a score of 580 (630 for Faculty of Education) with no score less than 5.0 (5.5 for Education) in the Test of Written English in all Faculties; or
4. Successful completion of at least two years of tertiary study conducted in the English language in Australia or another country in which English is the official language within the last two years.
5. International students require a minimum IELTS of 8.0 for speaking and listening prior to being employed as graduate teachers in New South Wales.

Detailed information regarding English language requirements for International Students is available on the Avondale website or in the Avondale College Handbook.

International applicants will have their qualifications assessed by the Enquiry and Enrolment Centre and are also required to satisfy Australian Government visa requirements.

### **ADDITIONAL COSTS**

Students could expect to spend approximately \$500 on textbooks, lecture notes, and excursions per semester, depending on the location of their professional experience and what major and minor fields of study they select. In some cases a textbook may be utilised over two semesters of study. In some units lecturers prepare ancillary material which can be purchased from the faculty secretary, but this cost is kept to a minimum and is usually not more than \$15 in any semester.



### **COURSE ASSURANCE**

In the event that Avondale is unable to continue to offer courses of study and confer degrees, agreements have been developed with other higher education providers that offer comparable courses. If Avondale is unable to continue to offer the Bachelor of Science and its associated degrees, students will be offered a transfer of their course of study to the following providers and 'block credit' will be approved for the semesters that have been successfully completed at Avondale:

- Bachelor of Science - The University of Newcastle
- Bachelor of Science/Bachelor of Teaching - The University of Newcastle or Christian Heritage College

### **FEE ASSURANCE**

If

- (i) Avondale ceases to be able to provide a course of study and
- (ii) Avondale has not transferred to another provider with whom the student has enrolled

the Seventh-day Adventist Church (SPD) Limited has provided a guarantee that students enrolled in Bachelor of Science degrees would either receive a refund of the student contribution or tuition fee paid for any incomplete units of study, or the funds paid for such incomplete units of study would be transferred (with the student's agreement) to an alternate provider with whom the student has enrolled.

A full explanation of Course and Fee Assurance is located on the Avondale website and in the Undergraduate Handbook.

### **ACCREDITATION**

The Bachelor of Science degree is accredited by the NSW Department of Education and Training.

The CRICOS registration numbers are:

- Bachelor of Science 057313A
- Bachelor of Science/Bachelor of Teaching 057315K
- Bachelor of Science/Bachelor of Teaching (Honours) 057316J

### **DELIVERY APPROACHES**

The following teaching/learning strategies are used:

- Lectures providing the essential knowledge base
- Tutorials: discussion of aspects derived from the lecture presentations and outside reading
- Seminars: where students present their findings and conclusions orally on assigned topics
- Laboratories: for gaining practical and conceptual skills in experimental work
- Videos: viewed either as a group or individually
- Group projects: to experience teamwork, develop research activities and prepare case analyses and presentations.

### **ASSESSMENT METHODS**

A wide range of methods are used to assess student performance. These include the more traditional closed book examination but may also include quizzes, presentations, role plays, research projects, 'take home' examinations and the completion of various written assignments. Typically in first year units the focus is on the evaluation of basic knowledge. Second year units build a deeper level and the evaluation methods reflect that change in emphasis. Third year units assess the ability of the student to analyse, synthesize and demonstrate a higher level of understanding of the major field of study.



### FEES

See Avondale's current fee sheet for information on tuition, residence and meal costs, or refer to Avondale's website [www.avondale.edu.au](http://www.avondale.edu.au).

### SCHOLARSHIPS

For a complete list of scholarships available to students, refer to Avondale's website [www.avondale.edu.au](http://www.avondale.edu.au).

### COMMONWEALTH SUPPORTED PLACES – AUSTRALIA AND NEW ZEALAND (HECS – HELP)

If you are a Bachelor of Education student from Australia or New Zealand, you may be eligible for a Commonwealth Supported Place (CSP), formerly known as a HECS place. These will be allocated on the basis of academic merit.

If you are an Australian citizen with a CSP you are able to benefit from HECS-HELP assistance which enables you to defer repayment of your student contribution or to receive a discount if all or part of the student contribution is paid up-front. New Zealand students and permanent residents in Australia are not able to benefit from HECS-HELP assistance. However, they can still have a Commonwealth Supported Place.

More information about your entitlements and conditions is available at [www.goingtouni.gov.au](http://www.goingtouni.gov.au).

### FEE HELP

Australian citizens not awarded a Commonwealth supported place are able to apply for assistance with payment of tuition fees through a Commonwealth loans program called FEE-HELP. In brief, the scheme enables both undergraduate and postgraduate students from Australia who are not offered or are not eligible for a Commonwealth supported place to defer payment of tuition fees until study is completed. Deductions are then made from the student's salary through the taxation system after they earn more than the specified minimum salary threshold. As a guide, the minimum salary threshold for the 2010-2011 financial year is \$44,912. At this point a percentage is deducted from their salary towards payment of your HELP debt.

More information about your entitlements and conditions is available at [www.goingtouni.gov.au](http://www.goingtouni.gov.au).

### HOW TO APPLY

For an information pack and application form contact the **Avondale Enquiry & Enrolment Centre** or apply online at [www.avondale.edu.au](http://www.avondale.edu.au)

Phone: **+61 2 4980 2377**

Free Phone: (within Australia) **1800 991 392**

Email: **enquiries@avondale.edu.au**

### EDUCATION AND SCIENCE - FACULTY DEAN

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CRICOS Provider No 02731D Avondale College Ltd.

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