

Faculty of Science and Mathematics

The Faculty of Science and Mathematics offers a three-year Bachelor of Science degree with a range of eight majors and, in conjunction with other Faculties, Bachelor of Science/Bachelor of Business and Bachelor of Science/Bachelor of Teaching (listed in the Faculty of Education section). The Faculty has articulation arrangements in place with the University of Newcastle and Charles Sturt University. Students are able to enrol for appropriate food and nutrition subjects at the University of Newcastle Ourimbah campus to complete their Avondale Food and Nutrition major. Students who complete a Bachelor of Science at Avondale College may transfer, with advanced standing, to the Bachelor of Medical Science (Pathology) at Charles Sturt University and complete the degree with one further year of study.

The Bachelor of Science degree prepares graduates for careers in a wide range of public or private organisations, including science laboratories, industrial, health and commercial organisations. The degree also provides a foundation for postgraduate study. The course is designed to enhance students' knowledge of science in the contemporary world, to provide opportunities for critical thinking and problem-solving in a context of Christian values, and to give laboratory/field experiences that develop appreciation for the joint role of theory and experimentation in furthering knowledge of the world around us.

Research Centre

Centre for Interdisciplinary Studies in Science

Head of Centre:

Dr Kevin de Berg

BSc, DipEd, BEd, PhD, MAppSc, MRACI, CChem

Staff

Dean

Lynden J Rogers

BSc(Hons), MSc, PhD, MAIP

Senior Lecturers

Terence J Annable

SRN Lond, DCR(T) Lond, BSc(Hons) Lond, CEEd(Tech) Lond, MSc UNE, PhD Sydney, MAPPs

Applied Biology

Kevin C de Berg

BSc Qld, DipEd Qld, BEd Qld, PhD Qld, MAppSc Curtin, MRACI, Cchem

Chemistry

Robert J Drewer

BSc Adel, BSc(Hons) Adel, PhD Adel

Chemistry

Wilfred J Pinchin

BA PUC, BSc(Hons) Lond, PhD Ncle, MAustMS, MAmMS

Mathematics

Lynden J Rogers

BSc(Hons) Lond, MSc Ncle (NSW), PhD Ncle, MAIP

Physics

Ewan Ward

BSc(Hons) NSW, PhD NSW

Biomedical Science

Lecturers

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BSc (Hons) Jaffna, GradDipTch Massey, MSc Massey

Mathematics

Jason Morton

BSc(Hons) Ncle, BSc Avondale, BEd PhysEd Ballarat

Biology

Laboratory Supervisors

Carmen Booyens

BSc Avondale, BTch Avondale

Ken Chapman

BSc (Hons) London, MSc Ncle

Bachelor of Science

Course coordinator: Dr Kevin de Berg

The Bachelor of Science degree prepares graduates for careers in a wide range of public or private organisations, including science laboratories, industrial, health and commercial organisations. The degree also provides a foundation for postgraduate study. The course is designed to enhance students' knowledge of science in the contemporary world, to provide opportunities for critical thinking and problem-solving in a context of Christian values, and to give laboratory/field experiences that develops appreciation for the joint role of theory and experimentation in furthering knowledge of the world around us.

Duration

Three years full-time or equivalent part-time

Credit points

144 credit points

Mode of delivery

On campus for the majority of subjects
BMS242 Human Cytogenetics studied by distance mode
FSHN subjects studied on the Ourimbah campus of the University of Newcastle

Abbreviations of course titles

BSc

Accreditation

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

Entry requirements

The general entry requirements for Avondale College degree courses are stated in the Academic Policies section of the Handbook. These requirements apply to all the majors in the BSc with the following additional requirements for specific majors/minors:

Biological Science

- 1 HSC (or equivalent) Chemistry, *or*
- 2 An HSC (or equivalent) Science subject and Chemistry Bridging Course, *or*
- 3 In the absence of HSC (or equivalent) Biology, a UAI of 70 and Chemistry Bridging Course or at least Year 11 Chemistry, *or*
- 4 Recommendation of the Faculty of Science and Mathematics
- 5 HSC (or equivalent) Biology is recommended.

Chemistry

- 1 HSC (or equivalent) Chemistry, *or* recommendation of the Faculty of Science and Mathematics, *and*
- 2 HSC (or equivalent) Mathematics, *or* recommendation of the Faculty of Science and Mathematics.

Food and Nutrition

- 1 HSC (or equivalent) Chemistry, *or*
- 2 An HSC (or equivalent) Science subject and Chemistry Bridging Course, *or*
- 3 In the absence of HSC (or equivalent) Biology, a UAI of 70 and Chemistry Bridging Course or at least Year 11 Chemistry, *or*
- 4 Recommendation of the Faculty of Science and Mathematics.
HSC (or equivalent) Biology is recommended.

Information Technology

HSC (or equivalent) Mathematics is recommended.

Mathematics

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

Physics

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

Course structure

The BSc degree consists of a minimum of 24 x 6-credit point subjects (144 credit points) over six semesters. The course is comprised of three Christian Studies subjects, and at least 21 subjects (126 credit points) in a combination of majors, minors and electives.

The BSc *major* is an approved sequence in a specific Science discipline or multi-discipline area comprised of at least eight subjects (48 credit points) including not more than two subjects (12 credit points) at 100-level, and at least three subjects (18 credit points) at 300-level.

The BSc *minor* is an approved sequence in a different Science discipline area or multi-discipline area to that chosen for the major comprised of at least four subjects (24 credit points) including not more than two subjects (12 credit points) at 100-level, and at least two subjects (12 credit points) at 200-level/300-level.

Majors and minors must be selected from different Science disciplines.

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

All subjects are worth 6 credit points (unless otherwise specified) with a notional semester workload of 150 hours, averaging 10–12 hours per week (including contact hours).

Christian Studies subjects

CR143	Christian Studies I
CR243	Christian Studies II*#
SC343	Christian Studies III—Scientific Perspectives in the Modern World

*SDA students may select the following alternative to CR243:
CY165 SDA History and Ministry of Ellen White

#The following alternatives to CR243 are available to students of other faiths:

NT160	Gospels A
NT170	Epistles A
EN223	The Bible as Literature
EN264	Literature and Religion (<i>odd years</i>)
TH362	Comparative Religions

All students may substitute an approved subject from the Faculty of Theology for either CR143 or CR243.

Required subjects

There are three required subjects in the biomedical major articulating with the BMedSc (Pathology) at Charles Sturt University. These are MA164.1 General Mathematics, MA163.2 Introduction to Statistics and PH163.1 General Physics. One subject, BMS242 Human Cytogenetics must also be taken by distance education from Charles Sturt University.

Majors

Biological Science—Biomedical Major
Biological Science—Environmental Major
Chemistry
Food and Nutrition (requires a Biological Science minor—see Structure)

Geography
Information Technology
Mathematics
Physics

Minors

Biological Chemistry
Biological Science—Biomedical Major
Biological Science—Environmental Major
Chemistry
Food and Nutrition (requires a Biological Science minor—see Structure)

Geography
Information Technology
Mathematics
Physics

At least one science minor must be undertaken. Other minors may be available from other degrees, subject to timetable constraints and with the approvals of the Dean of the Faculty of Science and the Dean of the Faculty offering the proposed minor.

Major seminar subjects

The offering of a major seminar/independent topic in the third year is normally subject to the student having satisfactorily completed at least three 200 or 300 level subjects in the major area. These subjects are normally 6 credit points; but may be offered as double sequence across two semesters (worth 12 credit points) if the project undertaken is large enough. Major seminars are also subject to staff availability and are offered at the discretion of the Dean of Faculty.

BI390.1/2	Seminar in Biology
CH390.1/2	Seminar in Chemistry
GE395.1/2	Independent Topic in Human Geography
GP395.1/2	Independent Topic in Physical Geography
MA390.1/2	Seminar in Mathematics
PH390.1/2	Seminar in Physics

Guided reading subjects

These subjects are units of guided reading and critical reflection in an area that supplements the student's field of study. They provide the student with an opportunity to critically review and interrogate the literature of their area of interest. Regular tutorial periods are required for the review of the chosen reading materials. These subjects are normally only offered when for some reason beyond the control of Avondale College a normal subject can not be offered in a given semester.

Electives

Electives may be chosen from the areas listed for major and minor studies in the BSc as well as other degree-level subjects. Science electives can be chosen from Biological Science (coded BI), Biological Chemistry (coded BI and CH), Chemistry (coded CH), Food and Nutrition (coded HP and DT), Geography (coded GE and GP), Information Technology (coded CO), Mathematics (coded MA), Physics (coded PH), and other science subjects (coded SC). Students anticipating postgraduate studies in the area of their major discipline are strongly advised to take the electives available in their major. No more than 12 credit points of electives outside the sciences (science subjects are coded BI, CH, CO, DT, GE, GP, HP, MA, PH, SC) and no more than 24 credit points of electives at 100 level are allowed. Only certain HP and DT subjects will be allowed as electives. Electives may also be restricted if prerequisites are required for the major/minor sequences. The Dean of the Faculty of Science and Mathematics is to be consulted regarding the choice of electives, particularly those outside the major/minor sequences, as not all subjects may be taken.

Articulations with other institutions

Food and Nutrition Major—The University of Newcastle subjects
A memorandum of understanding exists between the Faculty of Science and Mathematics (Avondale College) and the School of Science and Technology (The University

of Newcastle Central—Coast Campus). Avondale College students who have successfully completed the science subjects across the first four semesters shown in the Food and Nutrition Major/Biological Science Minor Structure will be eligible to enrol in The University of Newcastle subjects shown in semesters 5 and 6 of the same Structure. The award (after a minimum of three years) is the Avondale College Bachelor of Science (Food and Nutrition).

Articulation with Charles Sturt University Bachelor of Medical Science (Pathology)

A memorandum of understanding exists between the Faculty of Science and Mathematics (Avondale College) and the School of Biomedical Sciences (Charles Sturt University). Avondale College Bachelor of Science (Biological Sciences—Biomedical major and biological chemistry minor) graduates who have successfully completed the Charles Sturt University distance subject BMS242 while at Avondale College 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 (see Structure).

Major/minor subject sequences

Biological Science

Biological Science—Environmental major

BI160.1	Biology I
BI161.2	Comparative Functional Biology
BI262.1	Ecology
BI263.2	Mammalogy
BI266.2	Ecophysiology of Animals (<i>even years</i>)
BI362.2	Plant Biology (<i>odd years</i>)
BI368.1	Marine Biology
GP383.1	Biogeography

NOTE: Advised electives with this major:

SC360.1/2	Environmental Values and Ethics
MA162.2	Introduction to Statistics

Biological Science—Environmental major electives

BI261.1	Biochemistry
BI367.1	Applied Ecology (<i>even years</i>)
BI390.1/2	Seminar in Biology

Biological Science—Environmental minor

BI160 .1	Biology I
BI161.2	Comparative Functional Biology
BI262.1	Ecology

and one of

BI263.2	Mammalogy
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or

BI266.2	Ecophysiology of Animals (<i>even years</i>)
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Biological Science—Biomedical major

BI160.1	Biology I
BI161.2	Comparative Functional Biology
BI260.2	General Human Physiology
BI261.1	Biochemistry
BI264.1	General Microbiology
BI360.2	Investigative Biochemistry (<i>odd years</i>)

BI364.1	Advanced Human Physiology
BI365.2	Molecular Biology (<i>even years</i>)

Biological Science—Biomedical major electives

BI390.1/2	Seminar in Biology
HP341.2	Exercise Physiology

Biological Science—Biomedical minor

BI160.1	Biology I
BI161.2	Comparative Functional Biology

and any two of:

BI260.2	General Human Physiology
BI261.1	Biochemistry
BI264.1	General Microbiology

Biological Chemistry minor

BI267.2	Histotechniques (<i>odd years</i>)
BI268.2	Clinical Biochemistry (<i>even years</i>)
CH160.1	Chemistry IA
CH161.2	Chemistry IB

Chemistry

Chemistry major

CH160.1	Chemistry IA
CH161.2	Chemistry IB
CH260.1	Physical and Inorganic Chemistry IIA (<i>odd years</i>)
CH261.1	Physical and Inorganic Chemistry IIB (<i>odd years</i>)
CH262.1	Organic Chemistry IIA (<i>even years</i>)
CH360.2	Physical and Inorganic Chemistry IIIA (<i>odd years</i>)
CH362.2	Organic Chemistry IIIA (<i>even years</i>)
CH364.1	Organic Chemistry IIIC (<i>even years</i>)

Chemistry major electives

CH361.2	Physical and Inorganic Chemistry IIIB (<i>odd years</i>)
CH363.2	Organic Chemistry IIIB (<i>even years</i>)
CH390.1/2	Seminar in Chemistry

Chemistry minor

CH160.1	Chemistry IA
CH161.2	Chemistry IB
CH260.1	Physical and Inorganic Chemistry IIA (<i>odd years</i>)
CH262.1	Organic Chemistry IIA (<i>even years</i>)

Food and Nutrition

Food and Nutrition major

DT261.1	Food Production Systems
DT263.2	Food Science
DT364.1	Design Project (Food Product Design) (<i>odd years</i>)
FSHN3010.1	Food Processing and Quality Management*
HP161.2	Food, Nutrition and Health
HP262.1	Nutrition, Development and Performance
<i>or</i>	
FSHN3210.2	Food Product Development*
HP363.2	Health Promotion
<i>or</i>	
BI370.2	Food Microbiology

SC361.2 Food Industry Experience

or

FSHN3080 Professional Practice*

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

FSHN3100.2 Research Methods

FSHN3200.2 Applied Biotechnology

FSHN3230.1 Food Analysis

FSHN3420.2 Food Packaging

NOTES:

- 1 It is mandatory that a Food and Nutrition major be studied in association with an appropriate Biological Science minor. See the Structure.
- 2 Subjects asterisked (*) are offered from The University of Newcastle—Central Coast Campus. Students should consult with the Dean of the Faculty of Science and Mathematics in relation to any changes in the subjects offered by The University of Newcastle.

Food and Nutrition minor

DT261.1 Food Production Systems

HP161.2 Food, Nutrition and Health

HP262.1 Nutrition, Development and Performance

and one of:

DT263.2 Food Science

DT364.1 Design Project (Food Product Design) (*odd years*)

HP363.2 Health Promotion

NOTE: It is mandatory that a Food and Nutrition minor be studied in association with appropriate Biological Science subjects. See the Dean of the Faculty for details.

Geography

Geography major

GE180.2 Environmental Issues

GE190.1 Global Issues

GE293.2 Asia Pacific in the Global Economy

GE391.1 Development Geography

GE392.2 Urban Places and Society

GP281.1 Physical Geography A

GP282.2 Physical Geography B

GP383.1 Biogeography

Geography electives

GE292.2 Asian Fieldwork

GE395.1/2 Independent Topic in Human Geography

GP384.2 Geomorphology in the Arid Zone

GP395.1/2 Independent Topic in Physical Geography

SC360.1/2 Environmental Values and Ethics

Geography minor

GE180.2 Environmental Issues

GE190.1 Global Issues

and at least two Geography subjects at 200-level, or a vertical minor in Physical Geography:

GE180.2 Environmental Issues

GP281.1 Physical Geography A

GP282.2 Physical Geography B, and

GP383.1 Biogeography

Information Technology

Information Technology major

CO168.2 Introduction to Programming

CO292.1 Application Programming

CO293.1 Systems Analysis and Design I

CO298.1 Advanced Programming

CO375.2 Web Application Design

CO393.2 Systems Analysis and Design II

CO394.1 Database Management and Design

CO396.1 Information Technology Project

Required Information Technology elective

CO164.1 Introduction to Information Management

Information Technology electives

CO290.2 Emerging Trends in Information Technology

CO296.2 Operating Systems and Data Communication

Information Technology minor

CO168.2 Introduction to Programming

CO292.1 Application Programming

CO298.1 Advanced Programming

and at least one of:

CO290.2 Emerging Trends in Information Technology

CO293.1 Systems Analysis and Design I

CO296.2 Operating Systems and Data Communication

Required Information Technology elective

CO164.1 Introduction to Information Management

Mathematics

Mathematics major

MA160.1 Mathematics IA

MA161.2 Mathematics IB

MA260.1 Calculus II

MA261.2 Algebra II

MA262.1 Statistics II (*odd years*)

MA361.1 Algebra III

MA362.1 Mathematical Analysis (*even years*)

MA363.2 Advanced Mathematical Methods

Mathematics electives

MA263.2 Numerical Analysis (*even years*)

MA360.2 Calculus III (*odd years*)

MA390.1/2 Seminar in Mathematics

Mathematics minor

MA160.1 Mathematics IA

MA161.2 Mathematics IB

MA260.1 Calculus II

and one of:

MA261.2 Algebra II

MA262.1 Statistics II (*odd years*)

MA263.2 Numerical Analysis (*even years*)

Physics**Physics major**

PH160.1	Physics IA
PH161.2	Physics IB
PH260.2	Classical and Relativistic Mechanics (<i>odd years</i>)
PH261.1	From Quantum to Quark
PH262.1	Electricity and Magnetism
PH360.1	Space Physics
PH363.1	Electronics and Data Acquisition
PHYS3510	Advanced Waves and Laser Cavities*

NOTE: *offered from The University of Newcastle. Students should consult with the Dean of the Faculty regarding updates to subjects offered by The University of Newcastle. Subject alternations may vary according to student demand.

Physics electives

PH361.2	Quantum Physics (<i>odd years</i>)
PH362.2	Statistical and Condensed Matter Physics (<i>even years</i>)
PH390.1/2	Seminar in Physics

Physics minor

PH160.1	Physics IA
PH161.2	Physics IB
PH261.1	From Quantum to Quark

and one of:

PH260.2	Classical and Relativistic Mechanics (<i>odd years</i>)
PH262.1	Electricity and Magnetism
PH263.1	Electronics and Data Acquisition

Degree structures

The following pages summarise the standard structures for the BSc degree: one major and two minors/two majors. In addition the structures for the Food and Nutrition major and the articulated program in Pathology is shown. Limited flexibility may be possible in the sequence of electives, Christian Studies subjects and sometimes in the major and minor sequences. Contact the Course Coordinator for details.

Bachelor of Science Standard Structure

One Major and Two Minors

Sem				
1	Major 100	1 st Minor 100	Elective	2 nd Minor 100
2	Major 100	1 st Minor 100	CR143 Christian Studies I	2 nd Minor 100
3	Major 200	Major 200/300	1 st Minor 200	2 nd Minor 200
4	Major 200/300	1 st Minor 200	CR243 Christian Studies II	2 nd Minor 200
5	Major 200/300	Major 200/300	Science Elective 200/300	Science Elective 200/300
6	Major 300	Science Elective 200/300	SC343 Christian Studies III— Scientific Perspectives in the Modern World	Elective

Bachelor of Science Standard Structure

Two Majors

Sem				
1	1 st Major 100	Elective	Science Elective	2 nd Major 100
2	1 st Major 100	Elective	CR143 Christian Studies I	2 nd Major 100
3	1 st Major 200	1 st Major 200/300	2 nd Major 200	2 nd Major 200/300
4	1 st Major 200/300	Science Elective 200	CR243 Christian Studies II	2 nd Major 200/300
5	1 st Major 200/300	1 st Major 200/300	2 nd Major 200/300	2 nd Major 200/300
6	1 st Major 300	Science Elective 200/300	SC343 Christian Studies III— Scientific Perspectives in the Modern World	2 nd Major 300

Bachelor of Science

Food and Nutrition Major/Biological Science Minor/BBus (Marketing Major)

This major requires some subjects to be studied at The University of Newcastle (Central Coast Campus)

Sem				
1	BSc Prerequisite CH160 Chemistry IA or CH163 General Chemistry	BSc Minor BI160 Biology I	Business core CO164 Introduction to Information Management Skills	Business core AC160 Introduction to Accounting A
2	BSc Major HP161 Food Nutrition and Health	BSc Minor BI164 Comparative Functional Biology	CH161 Chemistry IB	BBus Major MK260 Consumer Behaviour
3	BSc Major DT261 Food Production Systems	BSc Minor BI264 General Microbiology	BSc Minor BI261 Biochemistry	Required MT145 Organisations in a Business Context
4	BSc Major DT263 Food Science	Business core EC122 Introduction to Economics	CR143 Christian Studies I	Business core LA145 Business Law
5	BSc Major FSHN3010 Food Processing and Quality Management*	BSc Major HP262 Nutrition Development and Performance	Business core MT216 Management Information Systems	BBus Major MK285 Marketing Research
6	BSc Major HP363 Health Promotion or BI370 Food Microbiology	Business core MA163 Business Statistics	BBus Major MT261 Organisational Behaviour	BBus Major MK281 Marketing Communication
7	BBus Major MK283 Services Marketing	MT343 Christian Studies III— Professional Ethics	BBus Major MK360 Current Issues and Electronic Marketing	Business core FN20 Business Finance
8	FSHN3210 Food Product Development*	CR243 Christian Studies II	BBus Major MK385 Managing Marketing Diversity	BBus Major MK365 Strategic Responses to Marketing

NOTES

* offered at the University of Newcastle—Central Coast Campus. Students should consult with the Dean of the Faculty of Science and Mathematics in relation to any changes in the subjects offered by The University of Newcastle.

Students completing Semesters 7 and 8 in an odd year may choose DT365 Design Project (Food Product Design) in Semester 7 instead of FSHN3210 Food Product Development in Semester 8. In this case CR243 Christian Studies II would need to be taken in Semester 8 instead of Semester 7.

Bachelor of Science

Biological Science (Biomedical Major/Biological Chemistry Minor)
and
Bachelor of Medical Science (Pathology)

BSc (Biological Science—Biomedical major/biological chemistry minor) at Avondale College with one distance education subject through Charles Sturt University (Wagga Wagga Campus), semesters 1 to 6.

Sem				
1	Major BI160 Biology I	Minor CH160 Chemistry IA (or CH163)	MA164 General Mathematics	Elective
2	Major BI161 Comparative Functional Biology	Minor CH161 Chemistry IB	MA162 Introduction to Statistics	CR143 Christian Studies I
3	Major BI261 Biochemistry	Major BI264 General Microbiology	PH163 General Physics	CR243 Christian Studies II
4	Major BI365 Molecular Biology (<i>even years</i>) or BI360 Investigative Biochemistry (<i>odd years</i>)	Minor BI260 General Human Physiology	Minor BI268 Clinical Biochemistry# (<i>even years</i>) or BI267 Histotechniques# (<i>odd years</i>)	BMS242.2 Human Cytogenetics*
5	Major BI364 Advanced Human Physiology	Chemistry elective 200	Science elective 200/300	Elective
6	Major BI360 Investigative Biochemistry (<i>odd years</i>) or BI365 Molecular Biology (<i>even years</i>)	Science elective 300	Minor BI267 Histotechniques# (<i>odd years</i>) or BI268 Clinical Biochemistry# (<i>even years</i>)	SC343 Christian Studies III— Scientific Perspectives in the Modern World

* offered by Charles Sturt University—distance mode from Wagga Wagga Campus

offered at Sydney Adventist Hospital

BMedSc(Pathology) at Charles Sturt University—Wagga Wagga Campus Semesters 7 and 8 (final year)

7	BMS308 Immunology	BMS314 Bacteriology/ Mycology	BMS216 Haematology I	BMS302 Clinical Biochemistry II
8		BMS309 Cell Pathology		BMS315 Virology/ Parasitology

Two blocks to be occupied by BMS336 Advanced Haematology and Blood Transfusion

Bachelor of Science/ Bachelor of Business

Course code: 4500

Course coordinator: Dr Kevin de Berg

The double degree in science and business provides opportunity for the combination of two awards in one program of studies. The course is designed to increase the employability of graduates by offering them the flexibility to become multi-skilled and gain broadened perspectives in their studies. Students who are unsure about their careers are provided with wider options. The course prepares a student to pursue a career which interfaces with either science, business, or a combination of the two. The double degree is structured to enable a student to obtain a double award in a shorter time than if the programs were studied separately. The degree is delivered within the context of Christian values and is designed to enhance the student's critical thinking and problem-solving abilities and his/her knowledge of science and business in the contemporary world.

Duration

Four years full-time or equivalent part-time

Credit points

192 credit points

Mode of delivery

On campus

Abbreviation of course title

BSc/BBus

Accreditation

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

Professional Society Recognition

Students wishing to gain CPA Australia recognition from the BSc/BBus (Accounting) program will need to complete the following additional subject:

LA260 Corporate Law

It must also be noted that students have a choice between AC334.2 Australian Tax Law and Practice and AC342.2 Auditing and Assurance Services, and that *CPA Australia* states that if either of these subjects is not taken in the degree course they will be required to be taken as part of the preparation for CPA status. Completion of the recognition requirements for either the CPA or ICAA may involve additional study beyond the minimum requirements for the degree.

Students should consult with the Dean of the Faculty of Business and Information Technology regarding the necessary prescribed BBus subject selections.

Entry requirements

The general entry requirements for Avondale College degree courses are stated in the Academic Policies section of the Handbook. These requirements apply to all the majors in the BSc/BBus with the following additional requirements for specific majors/minors:

Biological Science

- 1 HSC (or equivalent) Chemistry, *or*
- 2 An HSC (or equivalent) Science subject and Chemistry Bridging Course, *or*
- 3 In the absence of HSC (or equivalent) Biology, a UAI of 70 and Chemistry Bridging Course or at least Year 11 Chemistry, *or*
- 4 Recommendation of the Faculty of Science and Mathematics
- 5 HSC (or equivalent) Biology is recommended.

Chemistry

- 1 HSC (or equivalent) Chemistry, *or* recommendation of the Faculty of Science and Mathematics, *and*
- 2 HSC (or equivalent) Mathematics, *or* recommendation of the Faculty of Science and Mathematics.

Food and Nutrition

- 1 HSC (or equivalent) Chemistry, *or*
- 2 An HSC (or equivalent) Science subject and Chemistry Bridging Course, *or*
- 3 In the absence of HSC (or equivalent) Biology, a UAI of 70 and Chemistry Bridging Course or at least Year 11 Chemistry, *or*
- 4 Recommendation of the Faculty of Science and Mathematics
- 5 HSC (or equivalent) Biology is recommended.

Information Technology

HSC (or equivalent) Mathematics is recommended.

Mathematics

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

Physics

- 1 HSC (or equivalent) Physics, *or* recommendation of the Faculty of Science and Mathematics *and*
- 2 HSC (or equivalent) Mathematics Extension 1, *or* recommendation of the Faculty of Science and Mathematics.

Course structure

The BSc/BBus double degree consists of 32 x 6-credit subjects (192 credit points) over eight semesters. The course is comprised of Christian Studies subjects, a BSc *major*; a BSc *minor*, a BBus *major* and *business-core* subjects

The BSc *major* is an approved sequence in a specific Science discipline or multi-discipline area comprised of at least eight subjects (48 credit points) including not more than two subjects (12 credit points) at 100-level, and at least three subjects (18 credit points) at 300-level.

The BSc *minor* is an approved sequence in another specific Science discipline or multi-discipline area comprised of at least four subjects (24 credit points) including not more than two subjects (12 credit points) at 100-level, and at least two subjects (12 credit points) at 200-level.

A BBus *major* is a prescribed sequence in a specific business discipline of at least eight subjects (48 credit points).

The *business-core* subjects are a prescribed sequence of eight subjects (48 credit points) of business subjects common to all strands of the degree.

Majors, specialisations, and minors must be selected from different disciplines.

Electives are undergraduate subjects which a student may freely choose from most faculties (except professional subjects from the teaching, nursing and theology degrees, coded CM, CP, CZ, NR, PP, SP) subject to timetable and prerequisite constraints. Alternatively, electives may be used to augment a major or minor by taking additional subjects in the discipline or by taking allied subjects to broaden the major or minor. Students anticipating postgraduate study in the area of their specialisation/major are strongly advised to take electives in that discipline. Students should seek academic advice from their course adviser.

All subjects are worth 6 credit points (unless otherwise specified) with a notional semester workload of 150 hours, averaging 10–12 hours per week (including contact hours).

Christian Studies subjects

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

In the BSc/BBus degree the sequence is:

CR143 Christian Studies I
CR243 Christian Studies II* #
SC343 Christian Studies III—Scientific
Perspectives in the Modern World

or

MT343 Christian Studies III—Professional Ethics

*SDA students may select the following alternative to CR243:
CY165 SDA History and Ministry of Ellen White

#The following alternatives to CR243 are available to students of other faiths:

NT160	Gospels A
NT170	Epistles A
EN223	The Bible as Literature
EN264	Literature and Religion (<i>odd years</i>)
TH362	Comparative Religions

All students may substitute an approved subject from the Faculty of Theology for either CR143 or CR243.

BSc majors

Biological Science—Biomedical Strand
Biological Science—Environmental Strand
Chemistry
Food and Nutrition (*requires a Biological Science minor and normally a BBus Marketing major—see Structure*)
Geography
Information Technology
Mathematics
Physics

BSc minors

Biological Chemistry
Biological Science—Biomedical Strand
Chemistry
Food and Nutrition (*requires a Biological Science minor—see Structure*)
Geography
Information Technology (*cannot be combined with a BBus Information Technology major*)
Mathematics
Physics

BBus major

Accounting
Information Technology (*cannot be combined with a BSc Information Technology major or minor*)
Management
Marketing

Summary of minimum requirements in BSc/BBus degree

Component of course	Credit points
Christian Studies subjects	18
BSc Major	48
BSc Minor	24
BSc Electives	6
BBus Major	48
BBus Business-core	48
TOTALS	192

BSc major/minor sequences

See under Bachelor of Science degrees section

BBus major and business-core subject sequences

- MK365.2 Strategic Responses for Marketing
or
- MK385.2 Managing Marketing Diversity
- MT261.2 Organisational Behaviour

Accounting Major Strand

Business-core subjects

- AC160.1 Introduction to Accounting A
- CO164.1 Introduction to Information Management
- EC122.2 Introduction to Economics
- FN200.1 Business Finance
- LA145.2 Business Law
- MA163.2 Business Statistics
- MT145.1 Organisations in a Business Context
- MT216.1 Management Information Systems

Accounting

- AC162.2 Introduction to Accounting B
- AC222.1 Accounting History and Theory
- AC260.2 Corporate Accounting
- AC262.1 Management Accounting A
- AC263.2 Management Accounting B
- AC315.1 Contemporary Accounting Issues
- AC316.1 Business Systems Applications
- AC334.2 Auditing and Assurance Services
or
- AC342.2 Australian Tax Law and Practice

Information Technology

- CO168.2 Introduction to Programming
- CO290.2 Emerging Trends in Information Technology
- CO293.1 Systems Analysis and Design I
- CO296.2 Operating Systems and Data Communication
- CO298.1 Advanced Programming
- CO375.2 Web Application Design
- CO393.2 Systems Analysis and Design II
or
- CO394.1 Database Management and Design
- CO396.1 Information Technology Project

Management

- MK281.2 Marketing Communication
- MT251.1 Management Research
- MT261.2 Organisational Behaviour
- MT270.1 Human Resource Management
- MT280.2 Workplace Relations
- MT345.1 New Business Ventures and the Entrepreneur
- MT352.2 Management Project
- MT365.2 Strategic Responses for Managers
or
- MT385.2 Managing Diversity

Marketing

- MK260.2 Consumer Behaviour
- MK281.2 Marketing Communication
- MK283.1 Services Marketing
- MK285.1 Marketing Research
- MK360.1 Current Issues and Electronic Marketing
- MK362.2 Marketing Project

Degree structures

The standard structures for the BSc/BBus degree and the variant in Food and Nutrition (BSc strand) with Marketing (BBus strand) are provided on the following pages. Limited flexibility may be possible in the sequence of electives, Christian Studies subjects and sometimes in the major and minor sequences. See the course coordinator for details.

Bachelor of Science/Bachelor of Business

Standard Structure

Sem				
1	BSc Major 100	BSc Minor <i>or</i> Prerequisite 100	Business core CO164 Introduction to Information Management Skills	Business core AC160 Introduction to Accounting A
2	BSc Major 100	Business core EC122 Introduction to Economics	CR143 Christian Studies I	BBus Major
3	BSc Major 200	BSc Major 200/300 <i>or</i> BSc Minor 100	MT343 Christian Studies III— Professional Ethics	BBus core MT145 Organisations in a Business Context
4	BSc Major 200/300	BSc Minor 100 <i>or</i> BSc Major 200/300	Business core MA163 Business Statistics	Business core LA145 Business Law
5	BSc Major 200/300	BSc Major 200/300	Business core MT216 Management Information Systems	BBus Major
6	BSc Major 200/300	BSc Minor 200	BBus Major	BBus Major
7	BBus Major	CR243 Christian Studies II	BBus Major	Business core FN200 Business Finance
8	BSc Elective/Minor	BSc Minor 200	BBus Major	BBus Major

Bachelor of Science/Bachelor of Business

Food and Nutrition Major/Biological Science Minor/BBus (Marketing Major)

This major requires some subjects to be studied at The University of Newcastle (Central Coast Campus)

Sem				
1	BSc Prerequisite CH160 Chemistry IA <i>or</i> CH163 General Chemistry	BSc Minor BI160 Biology I	Business core CO164 Introduction to Information Management Skills	Business core AC160 Introduction to Accounting A
2	BSc Major HP161 Food Nutrition and Health	BSc Minor BI164 Comparative Functional Biology	CH161 Chemistry IB	Business core LA145 Business Law
3	BSc Major DT261 Food Production Systems	BSc Minor BI264 General Microbiology	BSc Minor BI261 Biochemistry	Business core MT145 Organisations in a Business Context
4	BSc Major DT263 Food Science	Business core EC122 Introduction to Economics	CR143 Christian Studies I	BBus Major MK260 Consumer Behaviour
5	BSc Major FSHN3010 Food Processing and Quality Management*	BSc Major HP262 Nutrition Development and Performance	Business core MT216 Management Information Systems	BBus Major MK285 Marketing Research
6	BSc Major HP363 Health Promotion <i>or</i> BI370 Food Microbiology	Business core MA163 Business Statistics	BBus Major MT261 Organisational Behaviour	BBus Major MK281 Marketing Communication
7	BBus Major MK283 Services Marketing	MT343 Christian Studies III— Professional Ethics	BBus Major MK360 Current Issues and Electronic Marketing	Business core FN200 Business Finance
8	FSHN3210 Food Product Development*	CR243 Christian Studies II	BBus Major MK385 Managing Marketing Diversity	BBus Major MK365 Strategic Responses to Marketing

NOTES

* offered at the University of Newcastle—Central Coast Campus. Students should consult with the Dean of the Faculty of Science and Mathematics in relation to any changes in the subjects offered by The University of Newcastle.

Students completing Semesters 7 and 8 in an odd year may choose DT365 Design Project (Food Product Design) in Semester 7 instead of FSHN3210 Food Product Development in Semester 8. In this case CR243 Christian Studies II would need to be taken in Semester 8 instead of Semester 7.