BSSS
AUSTRALIAN CAPITAL TERRITORY

Health Science

A/T/M

Front Cover Art provided by Canberra College student Aidan Giddings

Table of Contents

The ACT Senior Secondary System

The ACT senior secondary system recognises a range of university, vocational or life skills pathways.

The system is based on the premise that teachers are experts in their area: they know their students and community and are thus best placed to develop curriculum and assess students according to their needs and interests. Students have ownership of their learning and are respected as young adults who have a voice.

A defining feature of the system is school-based curriculum and continuous assessment. School-based curriculum provides flexibility for teachers to address students' needs and interests. College teachers have an opportunity to develop courses for implementation across ACT schools. Based on the courses that have been accredited by the BSSS, college teachers are responsible for developing programs of learning. A program of learning is developed by individual colleges to implement the courses and units they are delivering.

Teachers must deliver all content descriptions; however, they do have flexibility to emphasise some content descriptions over others. It is at the discretion of the teacher to select the texts or materials to demonstrate the content descriptions. Teachers can choose to deliver course units in any order and teach additional (not listed) content provided it meets the specific unit goals.

School-based continuous assessment means that students are continually assessed throughout years 11 and 12, with both years contributing equally to senior secondary certification. Teachers and students are positioned to have ownership of senior secondary assessment. The system allows teachers to learn from each other and to refine their judgement and develop expertise.

Senior secondary teachers have the flexibility to assess students in a variety of ways. For example: multimedia presentation, inquiry-based project, test, essay, performance and/or practical demonstration may all have their place. College teachers are responsible for developing assessment instruments with task specific rubrics and providing feedback to students.

The integrity of the ACT Senior Secondary Certificate is upheld by a robust, collaborative, and rigorous structured consensus-based peer reviewed moderation process. System moderation involves all year 11 and 12 teachers from public, non-government and international colleges delivering the ACT Senior Secondary Certificate.

Only students who desire a pathway to university are required to sit a general aptitude test, referred to as the ACT Scaling Test (AST), which moderates student scores across courses and colleges. Students are required to use critical and creative thinking skills across a range of disciplines to solve problems. They are also required to interpret a stimulus and write an extended response.

Senior secondary curriculum makes provision for student-centred teaching approaches, integrated and project-based learning inquiry, formative assessment, and teacher autonomy. ACT Senior Secondary Curriculum makes provision for diverse learners and students with mild to moderate intellectual disabilities, so that all students can achieve an ACT Senior Secondary Certificate.

The ACT Board of Senior Secondary Studies (BSSS) leads senior secondary education. It is responsible for quality assurance in senior secondary curriculum, assessment, and certification. The Board consists of nominees from colleges, professional bodies, universities, industry, parent/carer organisations and unions. The Office of the Board of Senior Secondary Studies (OBSSS) consists of professional and administrative staff who support the Board in achieving its objectives and functions.

ACT Senior Secondary Certificate

Courses of study for the ACT Senior Secondary Certificate:

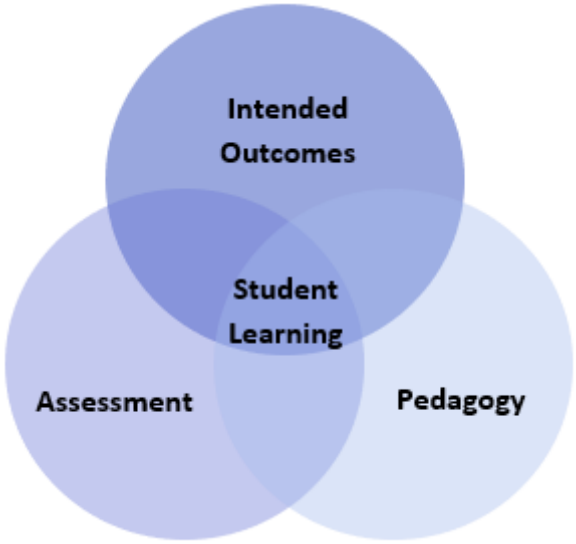
- provide a variety of pathways, to meet different learning needs and encourage students to complete their secondary education
- enable students to develop the essential capabilities for twenty-first century learners
- empower students as active participants in their own learning
- engage students in contemporary issues relevant to their lives
- foster students' intellectual, social, and ethical development
- nurture students' wellbeing, and physical and spiritual development
- enable effective and respectful participation in a diverse society.

Each course of study:

- comprises an integrated and interconnected set of knowledge, skills, behaviours, and dispositions that students develop and use in their learning across the curriculum
- is based on a model of learning that integrates intended student outcomes, pedagogy, and assessment
- outlines teaching strategies which are grounded in learning principles and encompass quality teaching
- promotes intellectual quality, establishes a rich learning environment, and generates relevant connections between learning and life experiences
- provides formal assessment and certification of students' achievements.

Underpinning beliefs

- All students are able to learn.
- Learning is a partnership between students and teachers.
- Teachers are responsible for advancing student learning.



Learning Principles

1. Learning builds on existing knowledge, understandings and skills.
   (Prior knowledge)
2. When learning is organised around major concepts, principles and significant real-world issues, within and across disciplines, it helps students make connections and build knowledge structures.
   (Deep knowledge and connectedness)
3. Learning is facilitated when students actively monitor their own learning and consciously develop ways of organising and applying knowledge within and across contexts.
   (Metacognition)
4. Learners' sense of self and motivation to learn affects learning.
   (Self-concept)
5. Learning needs to take place in a context of high expectations.
   (High expectations)
6. Learners learn in different ways and at different rates.
   (Individual differences)
7. Different cultural environments, including the use of language, shape learners' understandings and the way they learn.
   (Socio-cultural effects)
8. Learning is a social and collaborative function as well as an individual one.
   (Collaborative learning)
9. Learning is strengthened when learning outcomes and criteria for judging learning are made explicit and when students receive frequent feedback on their progress.
   (Explicit expectations and feedback)

General Capabilities

All courses of study for the ACT Senior Secondary Certificate should enable students to develop essential capabilities for twenty-first century learners. These 'capabilities' comprise an integrated and interconnected set of knowledge, skills, behaviours, and dispositions that students develop and use in their learning across the curriculum.

The capabilities include:

- literacy
- numeracy
- information and communication technology (ICT)
- critical and creative thinking
- personal and social
- ethical understanding
- intercultural understanding

Courses of study for the ACT Senior Secondary Certificate should be both relevant to the lives of students and incorporate the contemporary issues they face. Hence, courses address the following three priorities. These priorities are:

- Aboriginal and Torres Strait Islander histories and cultures
- Asia and Australia's engagement with Asia
- Sustainability

Elaboration of these General Capabilities and priorities is available on the ACARA website at www.australiancurriculum.edu.au.

Literacy

Literacy is important in students' development of Science Inquiry Skills and their understanding of content presented through the Science Understanding and Science as a Human Endeavour strands. Students gather, interpret, synthesise and evaluate information presented in a wide range of genres, modes and representations including lab reports, essays, scientific journals, oral presentations, popular science media, flow diagrams, symbols, graphs and tables. They evaluate information sources and compare and contrast ideas, information and opinions presented within and between texts. They communicate processes and ideas logically and fluently with scientific terminology and structure evidence-based arguments, selecting genres and employing appropriate structures and features to communicate for specific purposes and audiences.

Numeracy

Numeracy is key to students' ability to apply a wide range of *Science Inquiry Skills*, including making and recording observations; ordering, representing and analysing data; and interpreting trends and relationships. They employ numeracy skills to interpret complex spatial and graphic representations, and to appreciate the ways in which human systems are structured, interact and change across spatial and temporal scales. They engage in analysis of data, including issues relating to reliability and probability, and they interpret and manipulate mathematical relationships to calculate and predict values.

Information and Communication Technology (ICT) Capability

ICT capability is a key part of *Science Inquiry Skills*. Students use a range of strategies to locate, access and evaluate information from multiple digital sources; to collect, analyse and represent data; to model and interpret concepts and relationships; and to communicate and share science ideas, processes and information. Through exploration of *Science as a Human Endeavour* concepts, students assess the impact of ICT on the development of science and the application of science in society, particularly with regard to collating, storing, managing and analysing large data sets. Students learn how to use generative AI to support learning and as a work skill.

Critical and Creative Thinking

Critical and creative thinking is particularly important in the science inquiry process. Science inquiry requires the ability to construct, review and revise questions and hypotheses about increasingly complex and abstract scenarios and to design related investigation methods. Students interpret and evaluate data; interrogate, select and cross-reference evidence; and analyse processes, interpretations, conclusions and claims for validity and reliability, including reflecting on their own processes and conclusions. Science is a creative endeavour, and students devise innovative solutions to problems, predict possibilities, envisage consequences and speculate on possible outcomes as they develop *Science Understanding* and *Science Inquiry Skills.* They also appreciate the role of critical and creative individuals and the central importance of critique and review in the development and innovative application of science.

Personal and Social Capability

Personal and social capability is integral to a wide range of activities in Health Science, as students develop and practise skills of communication, teamwork, decision-making, initiative-taking and self-discipline with increasing confidence and sophistication. Students develop skills in both independent and collaborative investigation; they employ self-management skills to plan effectively, follow procedures efficiently and work safely; and they use collaboration skills to conduct investigations, share research and discuss ideas. In considering aspects of *Science as a Human Endeavour,* students also recognise the role of their own beliefs and attitudes in their response to science issues and applications, consider the perspectives of others, and gauge how science can affect people's lives. Students gain a greater understanding of human health and its role in their lives making them more capable of understanding their own personal health.

Ethical Understanding

Ethical understanding is a vital part of science inquiry. Students evaluate the ethics of experimental science, codes of practice, and the use of scientific information and science applications. They explore what integrity means in science, and they understand, evaluate and apply ethical guidelines in their investigations. They consider the implications of their investigations on others, the environment and living organisms. They use scientific information to evaluate the claims and actions of others and to inform ethical decisions about a range of social, environmental and personal issues and applications of science.

Intercultural Understanding

Intercultural understanding is fundamental to understanding aspects of *Science as a Human Endeavour*, as students appreciate the contributions of diverse cultures to developing science understanding and the challenges of working in culturally diverse collaborations. They develop awareness that raising some debates within culturally diverse groups requires cultural sensitivity, and they demonstrate open-mindedness to the positions of others. Students also develop an understanding that cultural factors affect the ways in which science influences and is influenced by society.

Cross-Curriculum Priorities

While the significance of the cross-curriculum priorities for Health Science varies, there are opportunities for teachers to select contexts that incorporate the key concepts from each priority.

Aboriginal and Torres Strait Islander Histories and Cultures

Through an investigation of contexts that draw on Aboriginal and Torres Strait Islander histories and cultures students could investigate the importance of Aboriginal and Torres Strait Islander Peoples' knowledge in developing a richer understanding of the ancient inhabitants of Australia. Students may develop an appreciation of Aboriginal and Torres Strait Islander Peoples and their contribution to science such as plant-based remedies. Additionally, students may evaluate the reasons for differential health indicators in Australian society.

Asia and Australia's Engagement with Asia

Contexts that draw on Asian scientific research and development and collaborative endeavours in the Asia Pacific region provide an opportunity for students to investigate Asia and Australia's engagement with Asia. Students could examine the important role played by people of the Asia region in such areas as medicine, biomechanics, and biotechnology. They could consider collaborative projects between Australian and Asian scientists and the contribution these make to scientific knowledge. Additionally, students may evaluate the reasons for similar and differential health indicators between Australia and Asia.

Sustainability

The Sustainability cross-curriculum priority is explicitly addressed in the Health Science curriculum. Health Science provides authentic contexts for exploring, investigating, and understanding the function and interactions of human body systems and life experiences. Students develop an appreciation for the interconnectedness of the human body to its environment. They understand the importance of using science to predict possible effects of an altered environment on the health of the human body.

Health Science

A/T/M

Rationale

In *Health Science*, students will investigate the major systems of the body and their functions. They will investigate malfunctions related to external and internal factors. They will examine the human body with the goal of understanding conditions and possible therapies for management and treatment using the latest evidence. Students will develop and understand the contested nature of human health and use their knowledge and understanding to evaluate claims in the popular media about maintaining the body and effective therapies. They will examine the ethical environment for *Health Science* and how to make ethical decisions about health. Students will apply the scientific method to develop empirically derived knowledge and understanding about health science and the human body.

Health Science provides students with the opportunities to inquire into fundamental questions about cells and tissues, and organisms at the microscopic level, as well as the macro systems that regulate and control the body, using scientific methodologies, including empirical and literature-based approaches. They will develop a basic and broad knowledge of the human body and medical science that will support further studies at the tertiary level. The fundamental scientific and information literacy developed will also support making informed decisions as a person and a citizen navigating a complex and constantly changing context.

This course supports students in pursuing pathways in health, medical, allied health and related fields of study and endeavour. These rapidly growing sectors provide many opportunities for meaningful employment. The knowledge and understanding developed will also support well-informed participation in personal and family life and citizenship.

Goals

Health Science aims to develop students':

- sense of wonder and curiosity about nature and an appreciation of how scientific knowledge can be used to address contemporary issues
- understanding of the theories and models used to describe, explain and make predictions about systems, structures and properties to provide a reliable basis for action
- understanding that scientific knowledge is developing over time, is being used in a variety of contexts and influences, and is continuing to be influenced by, historical, social, economic, cultural and ethical considerations and new discoveries understanding that Science is experimental and has developed through independent and collaborative research, and has significant impacts on society and implications for decision making
- ability to design and conduct a variety of field and laboratory investigations involving collection and critical analysis of data, and interpretation of evidence
- ability to critically evaluate scientific concepts, interpretations and claims in order to solve problems and generate informed, considered and ethical conclusions
- ability to communicate scientific understanding, findings, arguments and conclusions using appropriate representations, modes and genres.

Unit Titles

- Human Reproduction and Development
- Cardiorespiratory Health
- Human Digestive and Renal Systems
- Concepts in Neuroscience
- Independent Study

Organisation of Content

Human Reproduction and Development

In this unit, students investigate the properties, functions and health of the reproductive system, including the role of their specialised cells and tissues, and their control by the endocrine system in regulating development. They apply this knowledge particularly to investigate the developmental sequence from fertilisation through implantation, embryonic and foetal development. Students explore selected diseases and claims around the efficacy of related therapies.

Cardiorespiratory Health

In this unit, students investigate properties, functions and health of the cardiovascular and respiratory systems and elements of the musculoskeletal system including their specialised cells and tissues. They apply this knowledge to evaluate the impact of lifestyle choices, on the management and prevention of illness and diseases pertaining to these systems. Students explore selected conditions and claims around the efficacy of related therapies.

Human Digestive and Renal Systems

In this unit, students investigate properties, functions and health of the gastrointestinal and urinary systems, including their specialised cells and tissues and their control by the autonomic nervous system. They evaluate the impact of nutrition on health and explore nutrition related disease and conditions and claims around the efficacy of related therapies.

Concepts in Neuroscience

In this unit, students investigate properties, functions and health of the central and peripheral nervous systems including their specialised cells and tissues and their role in communication relevant to life experiences such as ageing, degenerative conditions, metal health and drugs. They conduct inquiries including an analysis of causation versus correlation in understanding environmental and genetic properties of these conditions. Students explore claims around the efficacy of related therapies, such as alternative and innovative therapies.

Independent Study

An Independent Study unit has an important place in senior secondary courses. It is a valuable pedagogical approach that empowers students to make decisions about their own learning. An Independent Study unit can be proposed by an individual student for their own independent study and negotiated with their teacher. The program of learning for an Independent Study unit must meet the unit goals and content descriptions as they appear in the course.

Independent Study units are only available to individual students in Year 12. A student can only study a maximum of one Independent Study unit in each course. Students must have studied at least three standard 1.0 units from this course. An Independent Study unit requires the principal's written approval. Principal approval can also be sought by a student in Year 12 to enrol concurrently in an Independent Study unit and their third or fourth 1.0 unit in this course of study.

Assessment

The identification of criteria within the achievement standards and assessment task types and weightings provides a common and agreed basis for the collection of evidence of student achievement.

Assessment Criteria (the dimensions of quality that teachers look for in evaluating student work) provide a common and agreed basis for judgement of performance against unit and course goals, within and across colleges. Over a course, teachers must use all these criteria to assess students' performance but are not required to use all criteria on each task. Assessment criteria are to be used holistically on a given task and in determining the unit grade.

Assessment Tasks elicit responses that demonstrate the degree to which students have achieved the goals of a unit based on the assessment criteria. The Common Curriculum Elements (CCE) is a guide to developing assessment tasks that promote a range of thinking skills (see Appendix C). It is highly desirable that assessment tasks engage students in demonstrating higher order thinking.

Rubrics are constructed for individual tasks, informing the assessment criteria relevant for a particular task, and can be used to assess a continuum that indicates levels of student performance against each criterion.

Assessment Criteria

Students will be assessed on the degree to which they demonstrate:

- Concepts models and applications
- Contexts
- Inquiry skills

Assessment Task Types

Suggested tasks:

- models
- commentary
- debate
- portfolio/journal
- field work
- investigation
- document/source analysis
- practical report
- role play
- research report
- test/quiz
- seminar/workshop/lecture
- poster
- response to stimulus
- essay
- multimedia presentation
- creative response
- interview
- discussion forum
- rationale/validation
- practical skills

Weightings in A/T/M 1.0 and 0.5 Units:

No task be weighted more than 40% for a standard 1.0 unit.

No task be weighted more than 50% for a half-standard 0.5 unit.

Additional Assessment Information

- For a standard unit (1.0), students must complete a minimum of three assessment tasks and a maximum of five.
- For a half standard unit (0.5), students must complete a minimum of two and a maximum of three assessment tasks.
- Assessment tasks for a standard (1.0) or half-standard (0.5) unit must be informed by the Achievement Standards.
- Students must experience a variety of task types and different modes of communication to demonstrate the Achievement Standards.
- For tasks completed in unsupervised conditions, schools need to have mechanisms to uphold academic integrity, for example: student declaration, plagiarism software, oral defence, interview or other validation tasks.

Achievement Standards

Years 11 and 12 Achievement Standards are written for A-T courses. A single Achievement Standard is written for M courses.

A Year 12 student in any unit is assessed using the Year 12 Achievement Standards. A Year 11 student in any unit is assessed using the Year 11 Achievement Standards. Year 12 Achievement Standards reflect higher expectations of student achievement compared to the Year 11 Achievement Standards. Years 11 and 12 Achievement Standards are differentiated by cognitive demand, the number of dimensions and the depth of inquiry.

An Achievement Standard cannot be used as a rubric for an individual assessment task. Assessment is the responsibility of the college. Student tasks may be assessed using rubrics or marking schemes devised by the college. A teacher may use the Achievement Standards to inform development of rubrics. The verbs used in Achievement Standards may be reflected in the rubric. In the context of combined Years 11 and 12 classes, it is best practice to have a distinct rubric for Years 11 and 12. These rubrics should be available for students prior to completion of an assessment task so that success criteria are clear.

Achievement Standards Science A Course Year 11

	*A student who achieves an **A** grade typically*	*A student who achieves a **B** grade typically*	*A student who achieves a **C** grade typically*	*A student who achieves a **D** grade typically*	*A student who achieves an **E** grade typically*
Concepts models and applications	• analyses the fundamental properties and functions of system components, processes and interactions, and how they are affected by factors across a range of temporal and spatial scales • analyses the nature, functions, limitations and applications of theories and models using evidence, in unfamiliar contexts • assesses evidence with reference to models and/or theories, and develops evidence-based conclusions and assesses limitations	• explains the fundamental properties and functions of system components, processes and interactions, and how they are affected by factors across a range of temporal and spatial scales • explains the nature, functions, limitations and applications of theories and models using evidence, in familiar contexts • explains evidence with reference to models and/or theories, and develops evidence-based conclusions and explains limitations	• describes the fundamental properties and functions of system components, processes and interactions, and how they are affected by factors across a range of temporal and spatial scales • describes the nature, functions, limitations and applications of theories and models with supporting evidence • describes evidence with reference to models and/or theories, and develops evidence-based conclusions and describes limitations	• identifies the fundamental properties and functions with some identification of system components and factors that affect processes across a range of temporal and spatial scales • identifies the nature, functions, applications, and some possible limitations of theories and models, with some evidence • identifies evidence, and develops conclusions with some reference to models and/or theories	• identifies the fundamental properties and functions with little or no identification of system components, processes, interactions and contextual scales • identifies the nature, function of theories and models, with an assertion of a few possible limitations • identifies evidence, and asserts conclusions with little or no reference to models and/or theories
Contexts	• analyses how the practice and applications of science meet needs, make decisions; and is influenced by social, economic, technological, and ethical factors	• explains how the practice and applications of science meet needs, make decisions, and is influenced by social, economic, technological, and ethical factors	• describes how the applications of science meet needs, make decisions, and is influenced by social, economic, technological, and ethical factors	• identifies ways in the applications of science meet needs, and is influenced by some factors	• identifies ways in which the application of science has been used in society to meet needs
Inquiry Skills	• designs, conducts and improves safe, ethical and original inquiries individually and collaboratively, that efficiently collect valid and reliable data in response to a complex question • analyses causal and correlational relationships, anomalies, reliability and validity of data and representations, and analyses errors • assesses processes and claims, provides a critique based on evidence, and discusses alternatives • reflects with insight on their own thinking and learning and evaluates planning, time management and use of appropriate strategies to work independently and collaboratively • communicates concisely, effectively and accurately, demonstrating scientific literacy in a range of modes, styles, representations, and genres for specific audiences and purposes, with appropriate evidence and accurate referencing	• designs, conducts and improves safe, ethical inquiries individually and collaboratively, that collect valid data in response to a complex question • explains causal and correlational relationships, anomalies, reliability and validity of data and representations, and explains errors • explains processes and claims, provides a critique with reference to evidence, and identifies alternatives • reflects on their own thinking and analyses planning, time management, use of appropriate strategies to work independently and collaboratively • communicates clearly and accurately, demonstrating scientific literacy in a range of modes, styles, representations and genres for specific audiences and purposes, with appropriate evidence and accurate referencing	• plans and conducts safe, ethical inquiries individually and collaboratively, that collect valid data in response to a question • describes relationships in data sets, reliability and validity of data and representations, and describes common errors • describes processes and claims, and identifies alternatives with some reference to evidence • reflects on their own thinking and explains planning, time management, use of appropriate strategies to work independently and collaboratively • communicates accurately demonstrating scientific literacy, in a range of modes, styles, representations, and genres for specific purposes, with appropriate evidence and mostly consistent referencing	• follows a procedure to conduct safe, ethical inquiries individually and collaboratively, to collect data in response to a question with varying success • identifies trends and anomalies in data and representations, with general comments about errors • identifies processes and claims, and identifies the need for improvements with some reference to evidence • reflects on their own thinking with some reference to planning, time management, use of appropriate strategies to work independently and collaboratively • communicates demonstrating some scientific literacy, in a range of modes, representations, and genres with some evidence and inconsistent referencing	• follows a procedure to conduct safe, ethical inquiries individually and collaboratively, to collect data with little or no connection to a question • identifies trends in data and representations, with little or no reference to anomalies and errors • identifies processes and the need for some improvements, with little or no reference to evidence • reflects on their own thinking with little or no reference to planning, time management, use of appropriate strategies to work independently and collaboratively • communicates demonstrating limited scientific literacy, in a range of modes and representations, with inconsistent and inaccurate referencing

Achievement Standards Science T Course Year 11

	*A student who achieves an **A** grade typically*	*A student who achieves a **B** grade typically*	*A student who achieves a **C** grade typically*	*A student who achieves a **D** grade typically*	*A student who achieves an **E** grade typically*
Concepts models and applications	• evaluates the fundamental properties and functions of system components, processes and interactions, and the effects of factors across a range of scales • evaluates the nature, functions, limitations and applications of theories and models using evidence, in unfamiliar contexts • analyses evidence with reference to models and/or theories, and develops evidence-based conclusions and evaluates limitations	• analyses the fundamental properties and functions of system components, processes and interactions, and the effects of factors across a range of scales • analyses the nature, functions, limitations and applications of theories and models using evidence, in familiar contexts • assesses evidence with reference to models and/or theories, and develops evidence-based conclusions and discusses limitations	• explains the fundamental properties and functions of system components, processes and interactions and the effects of factors across a range of scales • explains the nature, functions, limitations and applications of theories and models using evidence, in familiar contexts • explains evidence with reference to models and/or theories, and develops evidence-based conclusions and identifies limitations	• describes the fundamental properties and functions, and with some description of system components, processes and interactions, and the effects of factors across a range of scales • describes the nature, functions, limitations and applications of theories and models with supporting evidence • describes evidence, and develops conclusions with some reference to models and/or theories	• identifies the fundamental properties and functions of system and identifies components, processes and interactions, and the effects of factors across a range of scales • identifies the nature, functions, applications, and some possible limitations of theories and models, with some evidence • identifies evidence, and asserts conclusions with little or no reference to models and/or theories
Contexts	• evaluates epistemology, role of peer review, collaboration and technology in developing knowledge • evaluates the influence of social, economic, ethical and cultural factors on Science	• analyses epistemology, role of peer review and technology in developing knowledge • analyses the influence of social, economic, ethical and cultural factors on Science	• explain epistemology, role of peer review and technology in developing knowledge • explains the influence of social, economic, ethical and cultural factors on Science	• describes the role of peer review in developing knowledge • describes the influence of social, economic, ethical and cultural factors on Science	• identifies that scientific knowledge has changed over time • identifies the influence of social, economic, ethical and cultural factors on Science
Inquiry Skills	• designs, conducts and improves safe, ethical and original inquiries individually and collaboratively, that collect valid, reliable data in response to a complex question • analyses causal and correlational relationships, anomalies, reliability and validity of data and representations, and analyses errors • analyses processes and claims, and provides a critique based on evidence, and analyses alternatives • reflects with insight on own thinking and that of others, and evaluates planning, time management, and use of appropriate work strategies to work independently and collaboratively • communicates concisely, effectively and accurately, demonstrating scientific literacy in a range of modes, styles, representations, and genres for specific audiences and purposes, with appropriate evidence and accurate referencing	• designs, conducts and improves safe, ethical inquiries individually and collaboratively, that collect valid, reliable data in response to a question • analyses causal and correlational relationships, anomalies, reliability and validity of data and representations, and discusses errors • assesses processes and claims, and provides a critique with reference to evidence, and analyses alternatives • reflects on their own thinking and analyses planning, time management, use of appropriate work strategies to work independently and collaboratively • communicates clearly and accurately, demonstrating scientific literacy in a range of modes, styles, representations and genres for specific audiences and purposes, with appropriate evidence and accurate referencing	• plans and conducts safe, ethical inquiries individually and collaboratively, that collect valid data in response to a familiar question • explains causal and correlational relationships, anomalies, reliability and validity of data and representations, and cites common errors • explains processes and claims, and identifies alternatives with reference to reliable evidence • reflects on their own thinking and explains planning, time management, use of appropriate work strategies to work independently and collaboratively • communicates accurately demonstrating scientific literacy, in a range of modes, styles, representations, and genres for specific purposes, with appropriate evidence and mostly consistent referencing	• follows a procedure to conduct safe, ethical inquiries individually and collaboratively, to collect data in response to a simple question with varying success • describes trends, relationships and anomalies in data, identifies anomalies, and some possible sources of error • describes processes and claims, and identifies the need for improvements with some reference to evidence • reflects on their own thinking, with reference to planning and the use of appropriate work strategies to work independently and collaboratively • communicates demonstrating some scientific literacy, in a range of modes, representations, and genres with some evidence and inconsistent referencing	• follows a procedure to conduct safe, ethical inquiries individually and collaboratively, to collect data with little or no connection to a question • identifies trends and relationships in data, with little or no reference to sources of error • identifies processes and the need for some improvements, with little or no reference to evidence • reflects on their own thinking with little or no reference to planning, time management, and use of work strategies to work independently and collaboratively • communicates demonstrating limited scientific literacy, in a range of modes and representations, with inconsistent and inaccurate referencing

Achievement Standards Science A Course Year 12

	*A student who achieves an **A** grade typically*	*A student who achieves a **B** grade typically*	*A student who achieves a **C** grade typically*	*A student who achieves a **D** grade typically*	*A student who achieves an **E** grade typically*
Concepts models and applications	• analyses the fundamental properties and functions of system components, processes and interactions, and the effects of factors across a range of scales • analyses the nature, functions, limitations and applications of theories and models using evidence, in unfamiliar contexts • assesses evidence with reference to models and/or theories, and develops evidence-based conclusions and evaluates limitations	• explains the fundamental properties and functions of system components, processes and interactions, and the effects of factors across a range of scales • explains the nature, functions, limitations and applications of theories and models using evidence, in familiar contexts • explains evidence with reference to models and/or theories, and develops evidence-based conclusions and discusses limitations	• describes the fundamental properties and functions of system components, processes and interactions, and the effects of factors across a range of scales • describes the nature, functions, limitations and applications of theories and models using evidence, in familiar contexts • describes evidence with reference to models and/or theories, and develops evidence-based conclusions and identifies limitations	• describes the fundamental properties and functions of system components, processes and interactions, and the effects of one or more factors • describes the nature, functions, limitations and applications of theories and models with supporting evidence • describes evidence, and develops conclusions with some reference to models and/or theories	• identifies the fundamental properties and functions of system components, processes and interactions, and the effects of factors • identifies the nature, functions, applications, and some limitations of theories and models with some evidence • identifies evidence, and asserts conclusions with little or no reference to models and/or theories
Contexts	• analyses epistemology, role of peer review, collaboration and technology in developing knowledge analyses the influence of social, economic, ethical and cultural factors on Science	• explains epistemology, role of peer review and technology in developing knowledge • explains the influence of social, economic, ethical and cultural factors on Science	• describes epistemology, role of peer review and technology in developing knowledge • describes the influence of social, economic, ethical and cultural factors on Science	• describes role of peer review and technology in developing knowledge • describes the influence of social, economic, ethical and cultural factors on Science	• identifies that scientific knowledge has changed over time • identifies the influence of social, economic, ethical and cultural factors on Science
Inquiry Skills	• designs, conducts and improves safe, ethical and original inquiries individually and collaboratively, that collect valid, reliable data in response to a complex question • analyses causal and correlational relationships, anomalies, reliability and validity of data and representations, and analyses errors • analyses processes and claims, and provides a critique based on evidence, and analyses alternatives • reflects with insight on own thinking and that of others and, evaluates planning, time management and use of appropriate independent and collaborative work strategies • communicates concisely, effectively and accurately, demonstrating scientific literacy in a range of modes, styles, representations, and genres for specific audiences and purposes, with appropriate evidence and accurate referencing	• designs, conducts and improves safe, ethical inquiries individually and collaboratively, that collect valid, reliable data in response to a question • analyses causal and correlational relationships, anomalies, reliability and validity of data and representations, and discusses errors • explains processes and claims, and provides a critique with reference to evidence, and proposes alternatives • reflects on their own thinking and analyses planning, time management, and use of appropriate independent and collaborative work strategies • communicates clearly and accurately, demonstrating scientific literacy in a range of modes, styles, representations and genres for specific audiences and purposes, with appropriate evidence and accurate referencing	• plans and conducts safe, ethical inquiries individually and collaboratively, that collect valid data in response to a familiar question • describes causal and correlational relationships, anomalies, reliability and validity of data and representations, and cites common errors • describes processes and claims, and identifies alternatives with reference to reliable evidence • reflects on their own thinking and explains planning, time management, and use of appropriate independent and collaborative work strategies • communicates accurately demonstrating scientific literacy, in a range of modes, styles, representations, and genres for specific purposes, with appropriate evidence and mostly consistent referencing	• follows a procedure to conduct safe, ethical inquiries individually and collaboratively, to collect data in response to a simple question with varying success • describes trends, relationships and anomalies in data, identifies anomalies, and some possible sources of error • describes processes and claims, and identifies the need for improvements with some reference to evidence • reflects on their own thinking, with reference to planning and the use of appropriate independent and collaborative work strategies • communicates demonstrating some scientific literacy, in a range of modes, representations, and genres with some evidence and inconsistent referencing	• follows a procedure to conduct safe, ethical inquiries individually and collaboratively, to collect data with little or no connection to a question • identifies trends and relationships in data, with little or no reference to sources of error • identifies processes and the need for some improvements, with little or no reference to evidence • reflects on their own thinking with little or no reference to planning, time management, and use of appropriate independent and collaborative work strategies • communicates demonstrating limited scientific literacy, in a range of modes and representations, with inconsistent and inaccurate referencing

Achievement Standards Science T Course Year 12

	*A student who achieves an **A** grade typically*	*A student who achieves a **B** grade typically*	*A student who achieves a **C** grade typically*	*A student who achieves a **D** grade typically*	*A student who achieves an **E** grade typically*
Concepts models and applications	• evaluates the properties and functions of system components, processes and interactions, and the interplay and effects of factors across a range of scales • evaluates applications, limitations, and predictions of theories and models to explain systems and create solutions, with evidence, in unfamiliar contexts • evaluates evidence with reference to analysis of models and/or theories, and develops evidence-based conclusions and evaluates limitations	• analyses the properties and functions of system components, processes and interactions, and the interplay and effects of factors across a range of scales • analyses applications, limitations, and predictions of theories and models to explain systems and create plausible solutions, with evidence in familiar contexts • analyses evidence with reference to models and/or theories, and develops evidence-based conclusions and discusses limitations	• explains the fundamental properties and functions of system components, processes and interactions, and the effects of factors across a range of scales • explains applications, limitations, and predictions of theories and models to explain systems and create plausible solutions in familiar contexts • explains evidence with reference to models and/or theories, and develops evidence-based conclusions and identifies limitations	• describes the fundamental properties and functions of system components, processes and interactions, and the effects of one or more factors • describes the nature, functions, limitations and applications of theories and models to create solutions to problems with supporting evidence • describes evidence, and develops conclusions with some reference to models and/or theories	• identifies the fundamental properties and functions of system components, processes and interactions, and some affective factors • identifies the nature, functions, limitations and applications of theories and models, and suggest solutions to problems with supporting evidence, • identifies evidence, and asserts conclusions with little or no reference to models and/or theories
Contexts	• evaluates epistemology, role of peer review, collaboration, and technology in developing knowledge • evaluates the influence of social, economic, ethical and cultural factors on Science	• analyses epistemology, role of peer review and technology in developing knowledge • analyses the influence of social, economic, ethical and cultural factors on Science	• explains epistemology, role of peer review and technology in developing knowledge • explains the influence of social, economic, ethical and cultural factors on Science	• describes role of peer review and technology in developing knowledge • describes the influence of social, economic, ethical and cultural factors on Science	• identifies that scientific knowledge has changed over time • identifies the influence of social, economic, ethical and cultural factors on Science
Inquiry Skills	• designs, conducts and improves safe, ethical and original inquiries individually and collaboratively, that collect valid, reliable data in response to a complex question • evaluates cause and correlation, anomalies, reliability and validity of data and representations, and evaluates errors • evaluates processes and claims, and provides a critique based on evidence, and evaluates alternatives • reflects with insight on own thinking and that of others, evaluates planning, time management, and use of appropriate independent and collaborative work strategies • communicates concisely, effectively and accurately, with scientific literacy in a range of modes, representations, and genres for specific audiences and purposes, and accurate referencing	• designs, conducts and improves safe, ethical inquiries individually and collaboratively, that collect valid, reliable data in response to a question • analyses cause and correlation, anomalies, reliability and validity of data and representations, and analyses errors • analyses processes and claims, and provides a critique with reference to evidence, and analyses alternatives • reflects on their own thinking and analyses planning, time management, and use of appropriate independent and collaborative work strategies • communicates clearly and accurately, with scientific literacy in a range of modes, representations and genres for specific audiences and purposes, and accurate referencing	• plans and conducts safe, ethical inquiries individually and collaboratively, that collect valid data in response to a familiar question • explains causal and correlational relationships, anomalies, reliability and validity of data and representations, and discusses common errors • explains processes and claims, and identifies alternatives with reference to reliable evidence • reflects on their own thinking and explains planning, time management, and use of appropriate independent and collaborative work strategies • communicates accurately demonstrating scientific literacy, in a range of modes, representations, and genres for specific purposes, and mostly consistent referencing	• follows a procedure to conduct safe, ethical inquiries individually and collaboratively, to collect data in response to a simple question with varying success • describes trends, relationships and anomalies in data, identifies anomalies, and cites sources of error • describes processes and claims, and identifies the need for improvements with some reference to evidence • reflects on their own thinking, with reference to planning and the use of appropriate independent and collaborative work strategies • communicates demonstrating some scientific literacy, in a range of modes, representations, and genres with some evidence and inconsistent referencing	• follows a procedure to conduct safe, ethical inquiries individually and collaboratively, to collect data with little or no connection to a question • identifies trends and relationships in data with reference to sources of error • identifies processes and the need for some improvements, with little or no reference to evidence • reflects on their own thinking with little or no reference to planning, time management, and use of appropriate independent and collaborative work strategies • communicates demonstrating limited scientific literacy, in a range of modes and representations, with inconsistent and inaccurate referencing

Achievement Standards Science M Course Years 11 and 12

	*A student who achieves an **A** grade typically*	*A student who achieves a **B** grade typically*	*A student who achieves a **C** grade typically*	*A student who achieves a **D** grade typically*	*A student who achieves an **E** grade typically*
Concepts models and applications	• describes the properties and functions of system components and processes with independence • describes system components and processes with some reference to how they are affected by factors with independence	• describes the properties and functions of system components, processes and interactions with assistance • describes system components, processes and interactions with some reference to how they are affected by factors with assistance	• identifies the properties and functions of system components, processes and interactions with independence • identifies system components, processes and interactions with independence	• identifies the properties and functions of system components, processes and interactions with assistance • identifies system components, processes and interactions with assistance	• identifies the properties and functions of system components, processes and interactions with direct instruction • identifies system components, processes and interactions with direct instruction
Contexts	• describes the impact of science on an aspect of society with independence	• describes the impact of science on an aspect of society with some independence	• identifies the impact of science on an aspect of society with independence	• identifies the impact of science on an aspect of society with assistance	• identifies the impact of science on an aspect of society with direct instruction
Contexts	• plans and conducts investigations in response to a question or problem with independence • draws evidence-based conclusions from investigations with independence • reflects on own thinking and learning in science with independence • communicates findings effectively with independence	• plans and conducts investigations in response to a question or problem with some independence • draws evidence-based conclusions from investigations with some independence • reflects on own thinking and learning in science with some independence • communicates findings effectively with some independence	• plans and conducts investigations in response to a question or problem with assistance • draws evidence-based conclusions from investigations with assistance • reflects on own thinking and learning in science with assistance • communicates findings with assistance	• plans and conducts investigations in response to a question or problem with repeated cueing • draws evidence-based conclusions from investigations with repeated cueing • reflects on own thinking and learning in science with repeated cueing • communicates findings with repeated cueing	• follows a procedure to conduct investigations to collect data with direct instruction • draws evidence-based conclusions from investigations with direct instruction • reflects on own thinking and learning in science with direct instruction • communicates findings with direct instruction

Human Reproduction and Development — Value: 1.0

Human Reproduction and Development a — Value 0.5

Human Reproduction and Development b — Value 0.5

Unit Description

In this unit, students investigate the properties, function and health of the reproductive system, including the role of their specialised cells and tissues, and their control by the endocrine system in regulating development. They apply this knowledge particularly to investigate the developmental sequence from fertilisation through implantation, embryonic and foetal development. Students explore selected diseases and claims around the efficacy of related therapies.

Specific Unit Goals

This unit should enable students to:

A Course	T Course	M Course
• apply the fundamental knowledge of the reproductive systems and their regulation by the endocrine system to analyse the impact of life experiences on the properties and functions of these systems	• apply the fundamental knowledge of the reproductive systems and their regulation by the endocrine system to evaluate the impact of life experiences on the properties and functions of these systems	• describe the properties and functions of the reproductive and endocrine systems and describe, with some reference, to how they are affected by life experiences
• analyse applications, limitations, and predictions of theories and models of human development	• evaluate applications, limitations, and predictions of theories and models of human development	
• analyse evidence with reference to analysis of selected diseases and claims around the efficacy of related therapies, develop evidence-based conclusions and analyse limitations	• evaluate evidence with reference to analysis of selected diseases and claims around the efficacy of related therapies, develop evidence-based conclusions and evaluate limitations	• use evidence to solve problems relevant to human development
• analyse science inquiry skills, context of science, and knowledge of concepts, models, and applications to conduct valid scientific inquiry	• evaluate science inquiry methods, context of science, and knowledge of concepts, models, and applications to conduct valid scientific inquiry	
• analyse bioethical matters relevant to reproduction	• evaluate bioethical matters relevant to reproduction	

Content Descriptions

All content descriptions below must be delivered:

A Course	T Course	M Course
Concepts, models and applications		
• apply the fundamental knowledge of the reproductive systems and their regulation by the endocrine system to analyse the impact of life experiences across age or sex or demography on the properties and functions of these systems e.g. fertility and stress, sperm production and toxins	• apply the fundamental knowledge of the reproductive systems and their regulation by the endocrine system to evaluate the impact of life experiences across age or sex or demography on the properties and functions of these systems e.g. fertility and stress, sperm production and toxins	• describe the properties and functions of the reproductive and endocrine systems and describe, with some reference, to how they are affected by life experiences
• analyse applications, limitations, and predictions of theories and models using evidence, relevant to the reproductive system, endocrine system, and human development e.g. age and impact on fertility, epigenetics	• evaluate applications, limitations, and predictions of theories and models relevant to the reproductive system, endocrine system and human development and propose solutions to weaknesses in the model or propose solutions to the issue the model addresses e.g. age and impact on fertility, epigenetics	
• analyse evidence for the connection between life experiences at different stages of human life and development of disease/conditions and/or the evidence for the efficacy of treatments for the chosen disease or condition e.g. age at time of conception, gestational diabetes and the effect of related treatments on the health of the mother and foetus	• evaluate evidence for the connection between life experiences at different stages of human life and development of disease/conditions and/or the evidence for the efficacy of treatments for the chosen disease or condition e.g. age at time of conception, gestational diabetes and the effect of related treatments on the health of the mother and foetus	• use evidence to describe aspects relevant to human life and development

A Course	T Course	M Course
Contexts		
• analyse claims made in scientific texts and in popular media about health relevant to reproductive and endocrine systems e.g. hormone replacement therapy, prenatal supplements, pregnancy blogs versus scientific media • analyse bioethical, social policy, cultural and economic influence on science claims and practices related to the reproductive and endocrine systems e.g. gene therapies, cloning, designer babies	• evaluate claims made in scientific texts and in popular media about health relevant to reproductive and endocrine systems e.g. hormone replacement therapy, prenatal supplements, pregnancy blogs versus scientific media • evaluate bioethical, social policy, cultural and economic influence on science claims and practices related to the reproductive and endocrine systems e.g. gene therapies, cloning, designer babies	• Identify reliable sources of health information
Inquiry Skills		
• design, conduct and improve safe, ethical and original inquiries into human reproduction and development individually and collaboratively, that collect valid, reliable data in response to a complex question e.g. virtual simulations, research existing data sets • analyse cause and correlation, anomalies, reliability and validity of data and representations, and analyse errors in response to investigating a complex question about human reproduction and development e.g. sampling error, accurate and inaccurate data representations • analyse research/medical processes and claims about human reproduction and development and provide a critique based on evidence e.g. Tuskegee Syphilis study, Thalidomide, racial disparities in postpartum pain management	• design, conduct and improve safe, ethical and original inquiries into human reproduction and development individually and collaboratively, that collect valid, reliable data in response to a complex question e.g. virtual simulations, research existing data sets • evaluate cause and correlation, anomalies, reliability and validity of data and representations, and evaluate errors in response to investigating a complex question about human reproduction and development e.g. sampling error, accurate and inaccurate data representations • evaluate research/medical processes and claims about human reproduction and development and provide a critique based on evidence e.g. Tuskegee Syphilis study, Thalidomide, racial disparities in postpartum pain management	• plan the use of time, equipment and role/s and conduct investigations in response to a question or problem about human reproduction and development • describe information in graphs and other graphical formats • identify reliable sources of health information.

A Course	T Course	M Course
• communicate concisely, effectively, and accurately, with scientific literacy in a range of modes, representations, and genres for specific audiences and purposes, and accurate referencing e.g. use of scientific vocabulary, precise text structure	• communicate concisely, effectively, and accurately, with scientific literacy in a range of modes, representations, and genres for specific audiences and purposes, and accurate referencing e.g. use of scientific vocabulary, precise text structure	• communicate findings effectively including using basic scientific terms
• reflect with insight on own thinking and that of others, evaluate planning, time management, and use of appropriate independent and collaborative work strategies e.g. yarning circles, Kolb's learning cycle	• reflect with insight on own thinking and that of others, evaluate planning, time management, and use of appropriate independent and collaborative work strategies e.g. yarning circles, Kolb's learning cycle	• reflect on own thinking and learning in science

A guide to reading and implementing content descriptions

Content descriptions specify the knowledge, understanding and skills that students are expected to learn and that teachers are expected to teach. Teachers are required to develop a program of learning that allows students to demonstrate all the content descriptions. The lens which the teacher uses to demonstrate the content descriptions may be either guided through provision of electives within each unit or determined by the teacher when developing their program of learning.

A program of learning is what a college provides to implement the course for a subject. It is at the discretion of the teacher to emphasise some content descriptions over others. The teacher may teach additional (not listed) content provided it meets the specific unit goals. This will be informed by the student needs and interests.

Assessment

Refer to pages 9-10.

Cardiorespiratory Health — Value: 1.0

Cardiorespiratory Health a — **Value 0.5**

Cardiorespiratory Health b — **Value 0.5**

Unit Description

In this unit, students investigate properties, functions and health of the cardiovascular and respiratory systems and elements of the musculoskeletal system including their specialised cells and tissues. They apply this knowledge to evaluate the impact of lifestyle choices, on the management and prevention of illness and diseases pertaining to these systems. Students explore selected conditions and claims around the efficacy of related therapies.

Specific Unit Goals

This unit should enable students to:

A Course	T Course	M Course
• apply the fundamental knowledge of the cardiovascular, respiratory, and musculoskeletal systems to analyse the impact of life experiences on the properties and functions of the body systems	• apply the fundamental knowledge of the cardiovascular, respiratory, and musculoskeletal systems to evaluate the impact of life experiences on the properties and functions of the body systems	• describe the properties and functions of the cardiovascular, respiratory, and musculoskeletal systems and describe, with some reference, to how they are affected by life experiences
• analyse applications, limitations, and predictions of ideas and models of healthy cardiovascular, respiratory, and musculoskeletal systems	• evaluate applications, limitations, and predictions of ideas and models of healthy cardiovascular, respiratory, and musculoskeletal systems	
• analyse evidence with reference to analysis of selected diseases and claims around the efficacy of related therapies, develop evidence-based conclusions and analyse limitations	• evaluate evidence with reference to analysis of selected diseases and claims around the efficacy of related therapies, develop evidence-based conclusions and evaluate limitations	• use evidence to solve problems relevant to the cardiovascular, respiratory, and musculoskeletal systems
• analyse science inquiry skills, context of science, and knowledge of concepts, models, and applications to conduct valid scientific inquiry	• evaluate science inquiry methods, context of science, and knowledge of concepts, models, and applications to conduct valid scientific inquiry	
• analyse bioethical matters relevant to cardiovascular, respiratory, or musculoskeletal systems	• evaluate bioethical matters relevant to cardiovascular, respiratory, or musculoskeletal systems	

Content Descriptions

All knowledge, understanding and skills below must be delivered:

A Course	T Course	M Course
Concepts, models and applications		
• apply the fundamental knowledge of the cardiovascular, respiratory and elements of the musculoskeletal systems to analyse the impact of life experiences across age or sex or demography on the properties and functions of these systems e.g. smoking and heart health, osteoporosis and bone density, sickle cell anaemia	• apply the fundamental knowledge of the cardiovascular, respiratory and elements of the musculoskeletal systems to evaluate the impact of life experiences across age or sex or demography on the properties and functions of these systems e.g. smoking and heart health, osteoporosis and bone density, sickle cell anaemia	• describe the properties and functions of the cardiovascular, respiratory and elements of the musculoskeletal systems and describe, with some reference, to how they are affected by life experiences
• analyse applications, limitations, and predictions of theories and models relevant to the cardiovascular, respiratory, and musculoskeletal systems e.g. bone mineral density models and bone conditions, abnormality versus normality scales	• evaluate applications, limitations, and predictions of theories and models relevant to the cardiovascular, respiratory, and musculoskeletal systems and propose solutions to weaknesses in the model or propose solutions to the issue the model addresses e.g. bone mineral density models and bone conditions, abnormality versus normality scales	
• analyse the evidence for the connection between life experiences at different stages of human life and development of disease/conditions and/or the evidence for the efficacy of treatments for the chosen disease or condition e.g. smoking and lung disease, exercise in the treatment/prevention of heart disease	• evaluate the evidence for the connection between life experiences at different stages of human life and development of disease/conditions and/or the evidence for the efficacy of treatments for the chosen disease or condition e.g. smoking and lung disease, exercise in the treatment/prevention of heart disease	• use evidence to describe aspects relevant to the cardiovascular, respiratory, and musculoskeletal systems

A Course	T Course	M Course
Contexts		
• analyse claims made in scientific texts and in the popular media about health relevant to cardiovascular, respiratory, and musculoskeletal systems e.g. nutritional supplements and arthritis, pollution and the effect on lung health • analyse bioethical, social policy, cultural and economic influence on science claims and practices related to the cardiovascular, respiratory, and musculoskeletal systems e.g. transplants, unethical use of organoids, stem cell therapy	• evaluate claims made in scientific texts and in the popular media about health relevant to cardiovascular, respiratory, and musculoskeletal systems e.g. nutritional supplements and arthritis, pollution and the effect on lung health • evaluate bioethical, social policy, cultural and economic influence on science claims and practices related to the cardiovascular, respiratory, and musculoskeletal systems e.g. transplants, unethical use of organoids, stem cell therapy	• identify reliable sources of health information
Inquiry Skills		
• design, conduct and improve safe, ethical and original inquiries into cardiovascular, respiratory and musculoskeletal systems individually and collaboratively, that collect valid, reliable data in response to a complex question e.g. blood oxygen levels, research existing data sets for causes of cardiovascular disease • analyse cause and correlation, anomalies, reliability and validity of data and representations, and analyse errors in response to investigating a complex question about the cardiovascular, respiratory and musculoskeletal systems e.g. calibration of instruments, measurement errors, risk assessments and ethics	• design, conduct and improve safe, ethical and original inquiries into cardiovascular, respiratory and musculoskeletal systems individually and collaboratively, that collect valid, reliable data in response to a complex question e.g. blood oxygen levels, research existing data sets for causes of cardiovascular disease • evaluate cause and correlation, anomalies, reliability and validity of data and representations, and evaluate errors in response to investigating a complex question about the cardiovascular, respiratory and musculoskeletal systems e.g. calibration of instruments, measurement errors, risk assessments and ethics	• plan the use of time, equipment and role/s and conduct investigations in response to a question or problem about the cardiovascular, respiratory, and musculoskeletal systems • describe information in graphs and other graphical formats

A Course	T Course	M Course
• analyse research/medical processes and claims about the cardiovascular, respiratory, and musculoskeletal systems and provide a critique based on evidence e.g. high doses of vitamin E and heart health, stents to alleviate chest pain	• evaluate research/medical processes and claims about cardiovascular, respiratory, and musculoskeletal systems and provide a critique based on evidence e.g. high doses of vitamin E and heart health, stents to alleviate chest pain	• identify reliable sources of health information
• communicate concisely, effectively, and accurately, with scientific literacy in a range of modes, representations, and genres for specific audiences and purposes, and accurate referencing e.g. use of scientific vocabulary, precise text structure	• communicate concisely, effectively, and accurately, with scientific literacy in a range of modes, representations, and genres for specific audiences and purposes, and accurate referencing e.g. use of scientific vocabulary, precise text structure	• communicate findings effectively including using basic scientific terms
• reflect with insight on own thinking and that of others, evaluate planning, time management, and use of appropriate independent and collaborative work strategies e.g. yarning circles, Kolb's learning cycle	• reflect with insight on own thinking and that of others, evaluate planning, time management, and use of appropriate independent and collaborative work strategies e.g. yarning circles, Kolb's learning cycle	• reflect on own thinking and learning in science

A guide to reading and implementing content descriptions

Content descriptions specify the knowledge, understanding and skills that students are expected to learn and that teachers are expected to teach. Teachers are required to develop a program of learning that allows students to demonstrate all the content descriptions. The lens which the teacher uses to demonstrate the content descriptions may be either guided through provision of electives within each unit or determined by the teacher when developing their program of learning.

A program of learning is what a college provides to implement the course for a subject. It is at the discretion of the teacher to emphasise some content descriptions over others. The teacher may teach additional (not listed) content provided it meets the specific unit goals. This will be informed by the student needs and interests.

Assessment

Refer to pages 9-10.

Human Digestive and Renal Systems — Value: 1.0

Human Digestive and Renal Systems a — **Value 0.5**

Human digestive and Renal Systems b — **Value 0.5**

Unit Description

In this unit, students investigate properties, functions and health of the gastrointestinal and urinary systems, including their specialised cells and tissues and their control by the autonomic nervous system. They evaluate the impact of nutrition on health and explore nutrition related disease and conditions and claims around the efficacy of related therapies.

Specific Unit Goals

This unit should enable students to:

A Course	T Course	M Course
• apply the fundamental knowledge of the gastrointestinal and urinary systems, regulated by the autonomic nervous system, to analyse the impact of life experiences on the properties and functions of the body	• apply the fundamental knowledge of the gastrointestinal and urinary systems, regulated by the autonomic nervous system, to evaluate the impact of life experiences on the properties and functions of the body	• describe the properties and functions of the gastrointestinal and urinary systems, and describe, with some reference, to how they are affected by life experiences
• analyse applications, limitations, and predictions of theories and models of the gastrointestinal and urinary systems	• evaluate applications, limitations, and predictions of theories and models of the gastrointestinal and urinary systems	
• analyse evidence with reference to analysis of selected diseases and claims around the efficacy of related therapies, develop evidence-based conclusions and analyse limitations	• evaluate evidence with reference to analysis of selected diseases and claims around the efficacy of related therapies, develop evidence-based conclusions and evaluate limitations	• use evidence to solve problems relevant to the gastrointestinal and urinary systems
• analyse science inquiry skills, context of science, and knowledge of concepts, models, and applications to conduct valid scientific inquiry	• evaluate science inquiry methods, context of science, and knowledge of concepts, models, and applications to conduct valid scientific inquiry	
• analyse bioethical matters relevant to gastrointestinal or urinary systems.	• evaluate bioethical matters relevant to gastrointestinal or urinary systems	

Content Descriptions

All content descriptions below must be delivered:

A Course	T Course	M Course
Concepts, models and applications		
• apply the fundamental knowledge of the gastrointestinal and urinary systems to analyse the impact of life experiences across age or sex or demography on the properties and functions of the body e.g. diet and gastrointestinal health, incontinence, infection	• apply the fundamental knowledge of the gastrointestinal and urinary systems to evaluate the impact of life experiences across age or sex or demography on the properties and functions of the body e.g. diet and gastrointestinal health, incontinence, infection	• describe the properties and functions of the gastrointestinal and urinary systems and describe, with some reference, to how they are affected by life experiences
• analyse applications, limitations, and predictions of theories and models relevant to the gastrointestinal and urinary systems e.g. test results as proxies for conditions, use blood data analysis to compare with known standards and hypothesise conditions	• evaluate applications, limitations, and predictions of theories and models relevant to the gastrointestinal and urinary systems and human development and propose solutions to weaknesses in the model or propose solutions to the issue the model addresses e.g. test results as proxies for conditions, use blood data analysis to compare with known standards and hypothesise conditions	
• analyse the evidence for the connection between life experiences at different stages of human life and development of disease/conditions and/or the evidence for the efficacy of treatments for the chosen disease or condition e.g. diet and childhood obesity, stress and Irritable Bowel Syndrome, dietary interventions for coeliac disease, antibiotics for urinary tract infections	• evaluate the evidence for the connection between life experiences at different stages of human life and development of disease/conditions and/or the evidence for the efficacy of treatments for the chosen disease or condition e.g. diet and childhood obesity, stress and Irritable Bowel Syndrome, dietary interventions for coeliac disease, antibiotics for urinary tract infections	• use evidence to describe aspects relevant to the gastrointestinal and urinary systems

A Course	T Course	M Course
Contexts		
• analyse claims made in scientific texts and in the popular media about health relevant to gastrointestinal and urinary systems e.g. alternative diets such as vegetarian, keto and paleo, probiotics and health, gluten intolerance • analyse bioethical, social policy, cultural and economic influence on science claims and practices related to the gastrointestinal and urinary systems e.g. kidney transplants, use of pig insulin, kidney dialysis	• evaluate claims made in scientific texts and in the popular media about health relevant to gastrointestinal and urinary systems e.g. alternative diets such as vegetarian, keto and paleo, probiotics and health, gluten intolerance • evaluate bioethical, social policy, cultural and economic influence on science claims and practices related to the gastrointestinal and urinary systems e.g. kidney transplants, use of pig insulin, kidney dialysis	• identifies reliable sources of health information
Inquiry Skills		
• design, conduct and improve safe, ethical and original inquiries into gastrointestinal and urinary systems individually and collaboratively, that collect valid, reliable data in response to a complex question e.g. histology, artificial blood filtration • analyse cause and correlation, anomalies, reliability and validity of data and representations, and analyse errors in response to investigating a complex question about the gastrointestinal and urinary systems e.g. embarrassment error in self-reporting, misleading data representations	• design, conduct and improve safe, ethical and original inquiries into gastrointestinal and urinary systems individually and collaboratively, that collect valid, reliable data in response to a complex question e.g. histology, artificial blood filtration • evaluate cause and correlation, anomalies, reliability and validity of data and representations, and evaluate errors in response to investigating a complex question about the gastrointestinal and urinary systems e.g. embarrassment error in self-reporting, misleading data representations	• plan the use of time, equipment and role/s and conduct investigations in response to a question or problem about the gastrointestinal and urinary systems • describe information in graphs and other graphical formats

A Course	T Course	M Course
• analyse research/medical processes and claims about the gastrointestinal and urinary systems and provide a critique based on evidence e.g. probiotics to manage IBS symptoms, antibiotics for urinary tract infections, gluten free diet	• evaluate research/medical processes and claims about the gastrointestinal and urinary systems and provide a critique based on evidence e.g. probiotics to manage IBS symptoms, antibiotics for urinary tract infections, gluten free diet	• Identify reliable sources of health information
• communicate concisely, effectively, and accurately, with scientific literacy in a range of modes, representations, and genres for specific audiences and purposes, and accurate referencing e.g. use of scientific vocabulary, precise text structure	• communicate concisely, effectively, and accurately, with scientific literacy in a range of modes, representations, and genres for specific audiences and purposes, and accurate referencing e.g. use of scientific vocabulary, precise text structure	• communicate findings effectively
• reflect with insight on own thinking and that of others, evaluate planning, time management, and use of appropriate independent and collaborative work strategies e.g. yarning circles, Kolb's learning cycle	• reflect with insight on own thinking and that of others, evaluate planning, time management, and use of appropriate independent and collaborative work strategies e.g. yarning circles, Kolb's learning cycle	• reflect on own thinking and learning in science

A guide to reading and implementing content descriptions

Content descriptions specify the knowledge, understanding and skills that students are expected to learn and that teachers are expected to teach. Teachers are required to develop a program of learning that allows students to demonstrate all the content descriptions. The lens which the teacher uses to demonstrate the content descriptions may be either guided through provision of electives within each unit or determined by the teacher when developing their program of learning.

A program of learning is what a college provides to implement the course for a subject. It is at the discretion of the teacher to emphasise some content descriptions over others. The teacher may teach additional (not listed) content provided it meets the specific unit goals. This will be informed by the student needs and interests.

Assessment

Refer to pages 9-10.

Concepts in Neuroscience — Value: 1.0

Concepts in Neuroscience a — **Value 0.5**

Concepts in Neuroscience b — **Value 0.5**

Unit Description

In this unit, students investigate properties, functions and health of the central and peripheral nervous systems, including their specialised cells and tissues, and their role in communication relevant to life experiences such as ageing, degenerative conditions, metal health and drugs. They conduct inquiries including an analysis of causation versus correlation in understanding environmental and genetic properties of these conditions. Students explore claims around the efficacy of related therapies, such as alternative and innovative therapies.

Specific Unit Goals

This unit should enable students to:

A Course	T Course	M Course
• apply the fundamental knowledge of the central and peripheral nervous systems to analyse the impact of life experiences on the properties and functions of the body	• apply the fundamental knowledge of the central and peripheral nervous systems to evaluate the impact of life experiences on the properties and functions of the body	• describe the properties and functions of the nervous systems, and describe, with some reference, to how they are affected by life experiences
• analyse applications, limitations, and predictions of theories and models of the nervous system	• evaluate applications, limitations, and predictions of theories and models of the nervous system	
• analyse evidence with reference to analysis of selected diseases and claims around the efficacy of related therapies, develop evidence-based conclusions and analyse limitations	• evaluate evidence with reference to analysis of selected diseases and claims around the efficacy of related therapies, develop evidence-based conclusions and evaluate limitations	• use evidence to solve problems relevant to the nervous system
• analyse science inquiry skills, context of science, and knowledge of concepts, models, and applications to conduct valid scientific inquiry	• evaluate science inquiry methods, context of science, and knowledge of concepts, models, and applications to conduct valid scientific inquiry	
• analyse bioethical matters relevant to the nervous system	• evaluate bioethical matters relevant to the nervous system	

Content Descriptions

All content descriptions below must be delivered:

A Course	T Course	M Course
Concepts, models and applications		
• apply the fundamental knowledge of the nervous system to analyse the impact of life experiences including ageing, mental health, drugs and degenerative conditions on the properties and functions of the body e.g. Schizophrenia, Multiple Sclerosis, Bipolar Disorder	• apply the fundamental knowledge of the nervous system to evaluate the impact of life experiences including ageing, mental health, drugs and degenerative conditions on the properties and functions of the body e.g. Schizophrenia, Multiple Sclerosis, Bipolar Disorder	• describe the properties and functions of the nervous system and describe, with some reference, to how they are affected by life experiences
• analyse applications, limitations, and predictions of theories and models relevant to the nervous system e.g. neurobiological markers, cognitive function assessments, structural and functional MRI findings	• evaluate applications, limitations, and predictions of theories and models relevant to the nervous system and propose solutions to weaknesses in the model or propose solutions to the issue the model addresses e.g. neurobiological markers, cognitive function assessments, structural and functional MRI findings	
• analyse the evidence for the connection between life experiences at different stages of human life and development of disease/conditions and/or the evidence for the efficacy of treatments for the chosen disease or condition e.g. chronic stress and cognitive decline, physical exercise and cognitive function, cognitive behaviour therapy as a treatment for anxiety disorders	• evaluate the evidence for the connection between life experiences at different stages of human life and development of disease/conditions and/or the evidence for the efficacy of treatments for the chosen disease or condition e.g. chronic stress and cognitive decline, physical exercise and cognitive function, cognitive behaviour therapy as a treatment for anxiety disorders	• use evidence to describe aspects relevant to the nervous system
Contexts		
• analyse claims made in scientific texts and in the popular media about health relevant to the nervous system	• evaluate claims made in scientific texts and in the popular media about health relevant to the nervous system	• identifies reliable sources of health information

A Course	T Course	M Course
• analyse bioethical, social policy, cultural and economic influence on science claims and practices related to the nervous system e.g. head injuries such as concussion and brain health, portrayal of Schizophrenia by the media, drugs and brain health	• evaluate bioethical, social policy, cultural and economic influence on science claims and practices related to the nervous system e.g. head injuries such as concussion and brain health, portrayal of Schizophrenia by the media, drugs and brain health	
Inquiry Skills		
• design, conduct and improve safe, ethical and original inquiries into the nervous system individually and collaboratively, that collect valid, reliable data in response to a complex question e.g. cognitive tests, sensory reaction tests, sleep study	• design, conduct and improve safe, ethical and original inquiries into the nervous system individually and collaboratively, that collect valid, reliable data in response to a complex question e.g. cognitive tests, sensory reaction tests, sleep study	• plan the use of time, equipment and labour and conduct investigations in response to a question or problem about the nervous system
• analyse cause and correlation, anomalies, reliability and validity of data and representations, and evaluate errors in response to investigating a complex question about the nervous system e.g. self-reporting error, risk assessment and ethics, sampling errors and selection bias	• evaluate cause and correlation, anomalies, reliability and validity of data and representations, and evaluate errors in response to investigating a complex question about the nervous system e.g. self-reporting error, risk assessment and ethics, sampling errors and selection bias	• describe information in graphs and other graphical formats
• analyse research/medical processes and claims about the nervous system, and provide a critique based on evidence, and analyse alternative research methods, processes, or therapies e.g. cognitive behavioural therapy, complementary and alternative medicine, deep brain stimulation for Parkinson's Disease	• evaluate research/medical processes and claims about the nervous system, and provide a critique based on evidence e.g. cognitive behavioural therapy, complementary and alternative medicine, deep brain stimulation for Parkinson's Disease	• identify reliable sources of health information

A Course	T Course	M Course
• communicate concisely, effectively, and accurately, with scientific literacy in a range of modes, representations, and genres for specific audiences and purposes, and accurate referencing e.g. use of scientific vocabulary, precise text structure	• communicate concisely, effectively, and accurately, with scientific literacy in a range of modes, representations, and genres for specific audiences and purposes, and accurate referencing e.g. use of scientific vocabulary, precise text structure	• communicate findings effectively including basic scientific terms
• reflect with insight on own thinking and that of others, evaluate planning, time management, and use of appropriate independent and collaborative work strategies e.g. yarning circles, Kolb's learning cycle	• reflect with insight on own thinking and that of others, evaluate planning, time management, and use of appropriate independent and collaborative work strategies e.g. yarning circles, Kolb's learning cycle	• reflect on own thinking and learning in science

A guide to reading and implementing content descriptions

Content descriptions specify the knowledge, understanding and skills that students are expected to learn and that teachers are expected to teach. Teachers are required to develop a program of learning that allows students to demonstrate all the content descriptions. The lens which the teacher uses to demonstrate the content descriptions may be either guided through provision of electives within each unit or determined by the teacher when developing their program of learning.

A program of learning is what a college provides to implement the course for a subject. It is at the discretion of the teacher to emphasise some content descriptions over others. The teacher may teach additional (not listed) content provided it meets the specific unit goals. This will be informed by the student needs and interests.

Assessment

Refer to pages 9-10

Independent Study — Value 1.0

Independent Study a — **Value 0.5**

Independent Study b — **Value 0.5**

Prerequisites

Independent Study units are only available to individual students in Year 12. A student can only study a maximum of one Independent Study unit in each course. Students must have studied at least three standard 1.0 units from this course. An Independent Study unit requires the principal's written approval. Principal approval can also be sought by a student in Year 12 to enrol concurrently in an Independent Study unit and their third or fourth 1.0 unit in this course of study.

Unit Description

An Independent Study unit has an important place in senior secondary courses. It is a valuable pedagogical approach that empowers students to make decisions about their own learning. An Independent Study unit can be proposed by an individual student for their own independent study and negotiated with their teacher. The program of learning for an Independent Study unit must meet the unit goals and content descriptions as they appear in the course.

Specific Unit Goals

This unit should enable students to:

A Course	T Course	M Course
• apply the fundamental knowledge of the chosen system to analyse the impact of life experiences on the properties and functions of the body	• apply the fundamental knowledge of the chosen system to evaluate the impact of life experiences on the properties and functions of the body	• describe the properties and functions of the chosen system, and describe, with some reference, to how they are affected by life experiences
• analyse applications, limitations, and predictions of theories and models of the chosen system	• evaluate applications, limitations, and predictions of theories and models of the chosen system	
• analyse evidence with reference to analysis of selected diseases and claims around the efficacy of related therapies, develop evidence-based conclusions and analyse limitations	• evaluate evidence with reference to analysis of selected diseases and claims around the efficacy of related therapies, develop evidence-based conclusions and evaluate limitations	• use evidence to solve problems relevant to the nervous system
• analyse science inquiry skills, context of science, and knowledge of concepts, models and applications to conduct valid scientific inquiry	• evaluate science inquiry methods, context of science, and knowledge of concepts, models and applications to conduct valid scientific inquiry	
• analyse bioethical matters relevant to the chosen system	• evaluate bioethical matters relevant to the chosen system	

Content Descriptions

All content descriptions below must be delivered:

A Course	T Course	M Course
Concepts, models and applications		
• apply the fundamental knowledge of the chosen system to analyse the impact of life experiences across age or sex or demography on the properties and functions of these systems	• apply the fundamental knowledge of the chosen system to evaluate the impact of life experiences across age or sex or demography on the properties and functions of these systems	• describe the properties and functions of the chosen system and describe, with some reference, to how they are affected by life experiences
• analyse applications, limitations, and predictions of theories and models relevant to chosen system and propose solutions to weaknesses in the model or propose solutions to the issue the model addresses	• evaluate applications, limitations, and predictions of theories and models relevant to the chosen system and propose solutions to weaknesses in the model or propose solutions to the issue the model addresses	
• analyse the evidence for the connection between life experiences at different stages of human life and development of disease/conditions and/or the evidence for the efficacy of treatments for the chosen disease or condition	• evaluate the evidence for the connection between life experiences at different stages of human life and development of disease/conditions and/or the evidence for the efficacy of treatments for the chosen disease or condition	• use evidence to solve problems relevant to the chosen system
Contexts		
• analyse claims made in scientific texts and in the popular media about health relevant to the chosen system	• evaluate claims made in scientific texts and in the popular media about health relevant to the chosen system	• identifies reliable sources of health information
• analyse bioethical, social policy, cultural and economic influence on science claims and practices related to the chosen system	• evaluate bioethical, social policy, cultural and economic influence on science claims and practices related to the chosen system	
Inquiry Skills		
• design, conduct and improve safe, ethical and original inquiries into the chosen system individually and collaboratively, that collect valid, reliable data in response to a complex question	• design, conduct and improve safe, ethical and original inquiries into the chosen system individually and collaboratively, that collect valid, reliable data in response to a complex question	• plan and conduct investigations in response to a question or problem into the chosen system

A Course	T Course	M Course
• analyse cause and correlation, anomalies, reliability and validity of data and representations, and analyse errors in response to investigating a complex question about the chosen system	• evaluate cause and correlation, anomalies, reliability and validity of data and representations, and evaluate errors in response to investigating a complex question about the chosen system	
• analyse research/medical processes and claims about the chosen system and provide a critique based on evidence	• evaluate research/medical processes and claims about the chosen system and provide a critique based on evidence	
• communicate concisely, effectively, and accurately, with scientific literacy in a range of modes, representations, and genres for specific audiences and purposes, and accurate referencing	• communicate concisely, effectively, and accurately, with scientific literacy in a range of modes, representations, and genres for specific audiences and purposes, and accurate referencing	• communicates findings effectively with independence
• reflect with insight on own thinking and that of others, evaluate planning, time management, and use of appropriate independent and collaborative work strategies	• reflect with insight on own thinking and that of others, evaluate planning, time management, and use of appropriate independent and collaborative work strategies	• reflects on own thinking and learning in science with independence

A guide to reading and implementing content descriptions

Content descriptions specify the knowledge, understanding and skills that students are expected to learn and that teachers are expected to teach. Teachers are required to develop a program of learning that allows students to demonstrate all the content descriptions. The lens which the teacher uses to demonstrate the content descriptions may be either guided through provision of electives within each unit or determined by the teacher when developing their program of learning.

A program of learning is what a college provides to implement the course for a subject. It is at the discretion of the teacher to emphasise some content descriptions over others. The teacher may teach additional (not listed) content provided it meets the specific unit goals. This will be informed by the student needs and interests.

Assessment

Refer to pages 9-10.

Appendix A – Implementation Guidelines

Available course patterns

A standard 1.0 value unit is delivered over at least 55 hours. To be awarded a course, students must complete at least the minimum units over the whole minor or major course.

Course	Number of standard units to meet course requirements
Minor	Minimum of 2 units
Major	Minimum of 3.5 units

Units in this course can be delivered in any order.

Prerequisites for the course or units within the course

Students must have studied at least three standard 1.0 units from this course in order to access the Independent Study unit. An Independent Study unit requires the principal's written approval. Principal approval can also be sought by a student in Year 12 to enrol concurrently in an Independent Study unit and their third or fourth 1.0 unit in this course of study.

Arrangements for students continuing study in this course

Students who studied the previous course may undertake any units in this course provided there is no duplication of content.

Duplication of Content Rules

Students cannot be given credit towards the requirements for a Senior Secondary Certificate for a unit that significantly duplicates content in a unit studied in another course. The responsibility for preventing undesirable overlap of content studied by a student rests with the principal and the teacher delivering the course. Students will only be given credit for covering the content once.

Guidelines for Delivery

Program of Learning

A program of learning is what a school provides to implement the course for a subject. This meets the requirements for context, scope and sequence set out in the Board endorsed course. Students follow programs of learning in a college as part of their senior secondary studies. The detail, design, and layout of a program of learning are a college decision.

The program of learning must be documented to show the planned learning activities and experiences that meet the needs of particular groups of students, taking into account their interests, prior knowledge, abilities, and backgrounds. The program of learning is a record of the learning experiences that enable students to achieve the knowledge, understanding and skills of the content descriptions. There is no requirement to submit a program of learning to the OBSSS for approval. The Principal will need to sign off at the end of Year 12 that courses have been delivered as accredited.

Content Descriptions

Are all content descriptions of equal importance? No. It depends on the focus of study. Teachers can customise their program of learning to meet their own students' needs, adding additional content descriptions if desired or emphasising some over others. A teacher must balance student needs with their responsibility to teach all content descriptions. It is mandatory that teachers address all content descriptions and that students engage with all content descriptions.

Half standard 0.5 units

Half standard units appear on the course adoption form but are not explicitly documented in courses. It is at the discretion of the college principal to split a standard 1.0 unit into two half standard 0.5 units. Colleges are required to adopt the half standard 0.5 units. However, colleges are not required to submit explicit documentation outlining their half standard 0.5 units to the BSSS. Colleges must assess students using the half standard 0.5 assessment task weightings outlined in the framework. It is the responsibility of the college principal to ensure that all content is delivered in units approved by the Board.

Moderation

Moderation is a system designed and implemented to:

- provide comparability in the system of school-based assessment
- form the basis for valid and reliable assessment in senior secondary schools
- involve the ACT Board of Senior Secondary Studies and colleges in cooperation and partnership
- maintain the quality of school-based assessment and the credibility, validity, and acceptability of Board certificates.

Moderation commences within individual colleges. Teachers develop assessment programs and instruments, apply assessment criteria, and allocate Unit Grades, according to the relevant Framework. Teachers within course teaching groups conduct consensus discussions to moderate marking or grading of individual assessment instruments and Unit Grade decisions.

The Moderation Model

Moderation within the ACT encompasses structured, consensus-based peer review of Unit Grades for all accredited courses over two Moderation Days. In addition to Moderation Days, there is statistical moderation of course scores, including small group procedures, for T courses.

Moderation by Structured, Consensus-based Peer Review

Consensus-based peer review involves the review of student work against system wide criteria and standards and the validation of Unit Grades. This is done by matching student performance with the criteria and standards outlined in the Achievement Standards, as stated in the Framework. Advice is then given to colleges to assist teachers with, or confirm, their judgments. In addition, feedback is given on the construction of assessment instruments.

Preparation for Structured, Consensus-based Peer Review

Each year, teachers of Year 11 are asked to retain originals or copies of student work completed in Semester 2. Similarly, teachers of a Year 12 class should retain originals or copies of student work completed in Semester 1. Assessment and other documentation required by the Office of the Board of Senior Secondary Studies should also be kept. Year 11 work from Semester 2 of the previous year is presented for review at Moderation Day 1 in March, and Year 12 work from Semester 1 is presented for review at Moderation Day 2 in August.

In the lead up to Moderation Day, a College Course Presentation (comprised of a document folder and a set of student portfolios) is prepared for each A, T and M course/units offered by the school and is sent into the Office of the Board of Senior Secondary Studies.

The College Course Presentation

The package of materials (College Course Presentation) presented by a college for review on Moderation Days in each course area will comprise the following:

- a folder containing supporting documentation as requested by the Office of the Board through memoranda to colleges, including marking schemes and rubrics for each assessment item
- a set of student portfolios containing marked and/or graded written and non-written assessment responses and completed criteria and standards feedback forms. Evidence of all assessment responses on which the Unit Grade decision has been made is to be included in the student review portfolios.

Specific requirements for subject areas and types of evidence to be presented for each Moderation Day will be outlined by the Board Secretariat through the *Requirements for Moderation Memoranda* and Information Papers.

Visual evidence for judgements made about practical performances

It is a requirement that schools' judgements of standards to practical performances (A/T/M) be supported by visual evidence (still photos or video).

The photographic evidence submitted must be drawn from practical skills performed as part of the assessment process.

Teachers should consult the BSSS website for current information regarding all moderation requirements including subject specific and photographic evidence.

Appendix B – Course Developers

Name	College
Maha Yasin	Gungahlin College
Thomas Schwartz	Canberra Girls Grammar School
Melissa Pert	Saint Mary MacKillop College

Appendix C – Common Curriculum Elements

Common curriculum elements assist in the development of high-quality assessment tasks by encouraging breadth and depth and discrimination in levels of achievement.

Organisers	Elements	Examples
create, compose, and apply	apply	ideas and procedures in unfamiliar situations, content, and processes in non-routine settings
	compose	oral, written, and multimodal texts, music, visual images, responses to complex topics, new outcomes
	represent	images, symbols, or signs
	create	creative thinking to identify areas for change, growth, and innovation, recognise opportunities, experiment to achieve innovative solutions, construct objects, imagine alternatives
	manipulate	images, text, data, points of view
analyse, synthesise, and evaluate	justify	arguments, points of view, phenomena, choices
	hypothesise	statement/theory that can be tested by data
	extrapolate	trends, cause/effect, impact of a decision
	predict	data, trends, inferences
	evaluate	text, images, points of view, solutions, phenomenon, graphics
	test	validity of assumptions, ideas, procedures, strategies
	argue	trends, cause/effect, strengths, and weaknesses
	reflect	on strengths and weaknesses
	synthesise	data and knowledge, points of view from several sources
	analyse	text, images, graphs, data, points of view
	examine	data, visual images, arguments, points of view
	investigate	issues, problems
organise, sequence, and explain	sequence	text, data, relationships, arguments, patterns
	visualise	trends, futures, patterns, cause, and effect
	compare/contrast	data, visual images, arguments, points of view
	discuss	issues, data, relationships, choices/options
	interpret	symbols, text, images, graphs
	explain	explicit/implicit assumptions, bias, themes/arguments, cause/effect, strengths/weaknesses
	translate	data, visual images, arguments, points of view
	assess	probabilities, choices/options
	select	main points, words, ideas in text
identify, summarise and plan	reproduce	information, data, words, images, graphics
	respond	data, visual images, arguments, points of view
	relate	events, processes, situations
	demonstrate	probabilities, choices/options
	describe	data, visual images, arguments, points of view
	plan	strategies, ideas in text, arguments
	classify	information, data, words, images
	identify	spatial relationships, patterns, interrelationships
	summarise	main points, words, ideas in text, review, draft and edit

Appendix D – Glossary of Verbs

Verbs	Definition
Analyse	Consider in detail for the purpose of finding meaning or relationships, and identifying patterns, similarities and differences
Apply	Use, utilise or employ in a particular situation
Argue	Give reasons for or against something
Assess	Make a judgement about the value of
Classify	Arrange into named categories in order to sort, group or identify
Compare	Estimate, measure or note how things are similar or dissimilar
Compose	The activity that occurs when students produce written, spoken, or visual texts
Contrast	Compare in such a way as to emphasise differences
Create	Bring into existence, to originate
Critically analyse	Analysis that engages with criticism and existing debate on the issue
Demonstrate	Give a practical exhibition an explanation
Describe	Give an account of characteristics or features
Discuss	Talk or write about a topic, taking into account different issues or ideas
Evaluate	Examine and judge the merit or significance of something
Examine	Determine the nature or condition of
Explain	Provide additional information that demonstrates understanding of reasoning and/or application
Extrapolate	Infer from what is known
Hypothesise	Put forward a supposition or conjecture to account for certain facts and used as a basis for further investigation by which it may be proved or disproved
Identify	Recognise and name
Interpret	Draw meaning from
Investigate	Planning, inquiry into and drawing conclusions about
Justify	Show how argument or conclusion is right or reasonable
Manipulate	Adapt or change
Plan	Strategize, develop a series of steps, processes
Predict	Suggest what might happen in the future or as a consequence of something
Reflect	The thought process by which students develop an understanding and appreciation of their own learning. This process draws on both cognitive and affective experience
Relate	Tell or report about happenings, events, or circumstances
Represent	Use words, images, symbols, or signs to convey meaning
Reproduce	Copy or make close imitation
Respond	React to a person or text
Select	Choose in preference to another or others
Sequence	Arrange in order
Summarise	Give a brief statement of the main points
Synthesise	Combine elements (information/ideas/components) into a coherent whole
Test	Examine qualities or abilities
Translate	Express in another language or form, or in simpler terms
Visualise	The ability to decode, interpret, create, question, challenge and evaluate texts that communicate with visual images as well as, or rather than, words

Appendix E – Glossary for ACT Senior Secondary Curriculum

Courses will detail what teachers are expected to teach and students are expected to learn for year 11 and 12. They will describe the knowledge, understanding and skills that students will be expected to develop for each learning area across the years of schooling.

Learning areas are broad areas of the curriculum, including English, mathematics, science, the arts, languages, health, and physical education.

A **subject** is a discrete area of study that is part of a learning area. There may be one or more subjects in a single learning area.

Frameworks are system documents for Years 11 and 12 which provide the basis for the development and accreditation of any course within a designated learning area. In addition, frameworks provide a common basis for assessment, moderation, and reporting of student outcomes in courses based on the framework.

The **course** sets out the requirements for the implementation of a subject. Key elements of a course include the rationale, goals, content descriptions, assessment, and achievement standards as designated by the framework.

BSSS courses will be organised into units. A unit is a distinct focus of study within a course. A standard 1.0 unit is delivered for a minimum of 55 hours generally over one semester.

Core units are foundational units that provide students with the breadth of the subject.

Additional units are avenues of learning that cannot be provided for within the four core 1.0 standard units by an adjustment to the program of learning.

An **Independent Study unit** is a pedagogical approach that empowers students to make decisions about their own learning. An Independent Study unit can be proposed by a student and negotiated with their teacher but must meet the specific unit goals and content descriptions as they appear in the course.

An **elective** is a lens for demonstrating the content descriptions within a standard 1.0 or half standard 0.5 unit.

A **lens** is a particular focus or viewpoint within a broader study.

Content descriptions refer to the subject-based knowledge, understanding and skills to be taught and learned.

A **program of learning** is what a college develops to implement the course for a subject and to ensure that the content descriptions are taught and learned.

Achievement standards provide an indication of typical performance at five different levels (corresponding to grades A to E) following completion of study of senior secondary course content for units in a subject.

ACT senior secondary system **curriculum** comprises all BSSS approved courses of study.

Appendix F – Course Adoption

Conditions of Adoption

The course and units of this course are consistent with the philosophy and goals of the college and the adopting college has the human and physical resources to implement the course.

Adoption Process

Course adoption must be initiated electronically by an email from the principal or their nominated delegate to bssscertification@ed.act.edu.au. A nominated delegate must CC the principal.

The email will include the **Conditions of Adoption** statement above, and the table below adding the **College** name, and circling the **Classification/s** required.

College:	
Course Title:	
Classification/s:	A T M
Accredited from:	
Framework:	