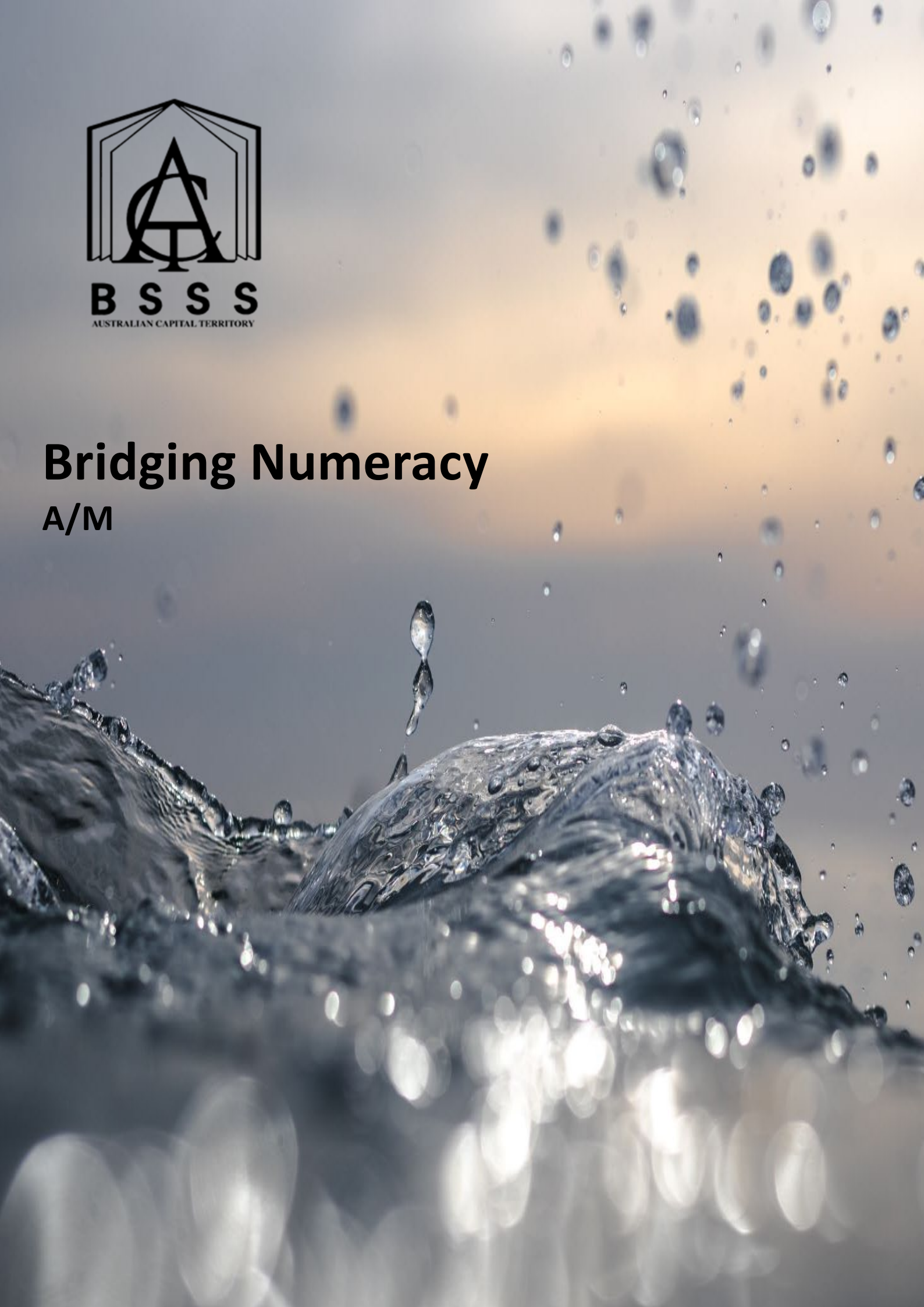
BSSS
AUSTRALIAN CAPITAL TERRITORY

Bridging Numeracy

A/M



Front Cover Art provided by Canberra College student Aidan Giddings

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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:

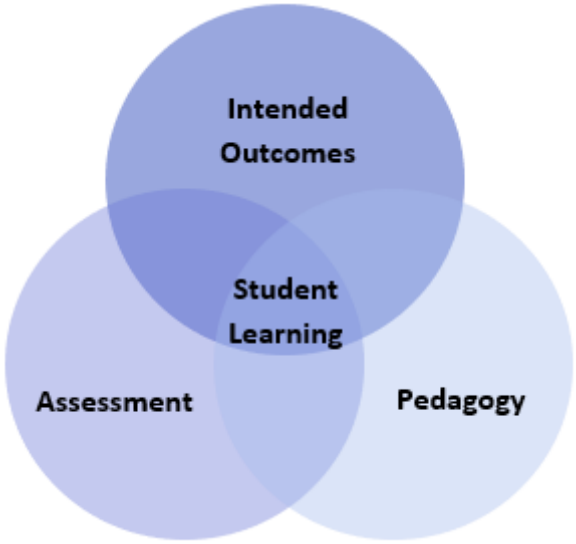
- provide a variety of pathways, to meet different learning needs and encourage students to complete their secondary education
- enable students to develop the essential capabilities for twenty-first century learners
- empower students as active participants in their own learning
- engage students in 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 in Mathematics

In the senior years these literacy skills and strategies enable students to express, interpret, and communicate complex mathematical information, ideas, and processes. Mathematics provides a specific and rich context for students to develop their ability to read, write, visualise, and talk about complex situations involving a range of mathematical ideas. Students can apply and further develop their literacy skills and strategies by shifting between verbal, graphic, numerical, and symbolic forms of representing problems in order to formulate, understand and solve problems and communicate results. Students learn to communicate their findings in different ways, using multiple systems of representation and data displays to illustrate the relationships they have observed or constructed.

Numeracy in Mathematics

The students who undertake this subject will continue to develop their numeracy skills at a more sophisticated level than in Years F to 10. This subject contains financial applications of Mathematics that will assist students to become literate consumers of investments, loans, and superannuation products. It also contains statistics topics that will equip students for the ever-increasing demands of the information age. Students will also learn about the probability of certain events occurring and will therefore be well equipped to make informed decisions about gambling.

Information and Communication Technology (ICT) Capability in Mathematics

In the senior years students use ICT both to develop theoretical mathematical understanding and apply mathematical knowledge to a range of problems. They use software aligned with areas of work and society with which they may be involved such as for statistical analysis, algorithm generation, data representation and manipulation, and complex calculation. They use digital tools to make connections between mathematical theory, practice, and application; for example, to use data, to address problems, and to operate systems in authentic situations.

Critical and Creative Thinking in Mathematics

Students compare predictions with observations when evaluating a theory. They check the extent to which their theory-based predictions match observations. They assess whether, if observations and predictions don't match, it is due to a flaw in theory or method of applying the theory to make predictions – or both. They revise, or reapply their theory more skilfully, recognising the importance of self-correction in the building of useful and accurate theories and making accurate predictions.

Personal and Social Capability in Mathematics

In the senior years students develop personal and social competence in Mathematics through setting and monitoring personal and academic goals, taking initiative, building adaptability, communication, teamwork, and decision-making.

The elements of personal and social competence relevant to Mathematics mainly include the application of mathematical skills for their decision-making, life-long learning, citizenship, and self-management. In addition, students will work collaboratively in teams and independently as part of their mathematical explorations and investigations.

Ethical Understanding in Mathematics

In the senior years students develop ethical behaviour in Mathematics through decision-making connected with ethical dilemmas that arise when engaged in mathematical calculation and the dissemination of results and the social responsibility associated with teamwork and attribution of input.

The areas relevant to Mathematics include issues associated with ethical decision-making as students work collaboratively in teams and independently as part of their mathematical explorations and investigations. Acknowledging errors rather than denying findings and/or evidence involves resilience and examined ethical behaviour. Students develop increasingly advanced communication, research, and presentation skills to express viewpoints.

Intercultural Understanding in Mathematics

Students understand Mathematics as a socially constructed body of knowledge that uses universal symbols but has its origin in many cultures. Students understand that some languages make it easier to acquire mathematical knowledge than others. Students also understand that there are many culturally diverse forms of mathematical knowledge, including diverse relationships to number and that diverse cultural spatial abilities and understandings are shaped by a person’s environment and language.

Cross-Curriculum Priorities

Aboriginal and Torres Strait Islander Histories and Cultures

The Senior Secondary Mathematics curriculum values the histories, cultures, traditions, and languages of Aboriginal and Torres Strait Islander Peoples past and ongoing contributions to contemporary Australian society and culture. Through the study of mathematics within relevant contexts, opportunities will allow for the development of students' understanding and appreciation of the diversity of Aboriginal and Torres Strait Islander Peoples histories and cultures.

Asia and Australia's Engagement with Asia

There are strong social, cultural, and economic reasons for Australian students to engage with the countries of Asia and with the past and ongoing contributions made by the peoples of Asia in Australia. It is through the study of mathematics in an Asian context that students engage with Australia's place in the region. Through analysis of relevant data, students are provided with opportunities to further develop an understanding of the diverse nature of Asia's environments and traditional and contemporary cultures.

Sustainability

Each of the senior Mathematics subjects provides the opportunity for the development of informed and reasoned points of view, discussion of issues, research and problem solving. Therefore, teachers are encouraged to select contexts for discussion connected with sustainability. Through analysis of data, students have the opportunity to research and discuss this global issue and learn the importance of respecting and valuing a wide range of world perspectives.

Bridging Numeracy

A/M

Rationale

Bridging Numeracy is built on a foundation of students seeing and understanding how quantitative skills and understanding can be applied to their own lives, in the workplace, in their personal life, and as part of effective citizenship.

The *Bridging Numeracy* course is designed to support senior secondary students in achieving the benchmark of the Australian Core Skills Framework (ACSF) Level 3. This course is grounded in disciplinary numeracy and authentic experiences, aiming to empower students to effectively engage with quantitative tasks across diverse subjects and real-world contexts.

The need for a comprehensive numeracy course arises from the increasing demands of academic and professional settings, where students are expected to demonstrate strong reasoning and logic skills, critical thinking, and the ability to analyse and interpret graphs and tables. The development of these skills is essential for success in higher education and active participation in today's rapidly evolving society.

Goals

This course should enable students to:

- critically and creatively apply mathematical concepts, models, and techniques
- evaluate the reasonableness of solutions to problems
- develop a critical appreciation of the use of information and communication technology in mathematics
- communicate using appropriate mathematical language
- develop mathematical judgements and arguments through inquiry
- learn with purpose and persistence, independently and collaboratively
- evaluate the potential of mathematics to generate knowledge in the public good
- reflect on thinking and learning.

Unit Titles

- Practical Numeracy
- Techno-mathematical Skills
- Making Informed Numeracy Decisions
- Interdisciplinary Mathematics

Organisation of Content

Practical Numeracy

Students learn about the versatility and practical applications of mathematics in personal, workplace and social contexts. Students will study numeracy in the workplace, workplace problem solving, and be empowered to interpret mathematics pertaining to pay and conditions. Students will be able to effectively identify, interpret and use mathematical and problem-solving strategies in workplace situations with confidence and flexibility. Students practice transferring these skills to other personal, social, or academic situations. Students learn to identify when a problem is making use of quantitative thinking and skills. They build a disposition of understanding when and how to use their mathematical skills, including identifying when to make the contextual leap to apply quantitative skills to both -familiar and unfamiliar problems.

Techno-mathematical Skills

Students learn to use and manipulate quantitative information with a focus on data literacy and technical software skills. Students will study personal financial numeracy. Students will be able to effectively identify, interpret and use mathematical and problem-solving strategies and tools in the management of their personal or work life to make informed and well-reasoned financial decisions. Students learn to communicate mathematical understanding and decisions using spreadsheets. Students build a disposition of confidence and calculated risk, using their understanding of data literacy, sense of number and sense of error, including knowing when to make use of physical, and digital tools in service of their quantitative goals.

Making Informed Numeracy Decisions

Students learn how to interpret quantitative information to inform decision-making in personal and societal contexts. Students will be able to effectively identify, interpret and use mathematical and problem-solving strategies for managing their own lives, including common experiences such as, probability-based decisions, assessing the accuracy of claims made in the media, assessing contract terms, tenancy, or the mathematics of transport and travel. They will understand how information is represented to favour particular points of view or interests and build a disposition toward implementing their critical quantitative skills when faced with both familiar and unfamiliar information presented by online, media and commercial sources.

Interdisciplinary Mathematics

Students use numeracy skills required for one or more interdisciplinary contexts, such as maintaining personal and supporting others' health, sports, the built environment, or personal areas of interest such as volunteering, community work, or gaming. Students will be able to effectively identify, interpret and use mathematical and problem-solving strategies to make informed and well-reasoned decisions within a discipline or circumstance. Students will transfer their quantitative skills to unfamiliar problems and areas of study and build a disposition of valuing the link between numeracy and practical application of quantitative skills in contexts that link to their interests.

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 and techniques
- reasoning and communications.

Assessment Task Types

Suggested tasks:

- project/assignment
- modelling projects
- portfolio
- journal
- validation activity
- presentation such as a pitch, poster, vodcast, interview
- practical activity such as a demonstration
- test/examination
- online adaptive tasks/quiz

Weightings in A/T/M 1.0 Units:

No task to be weighted more than 50% for a standard 1.0 unit.

Additional Assessment Information

Requirements

- 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.
- Students should experience a variety of task types (test and non-test) and different modes of communication to demonstrate the Achievement Standards.
- Students are required to undertake at least one problem solving investigation task each semester. This task may be completed individually or collaboratively. They are required to plan, enquire into and draw conclusions about key unit concepts. Students may respond in forms such as modelling projects, problem solving and practical activities.
- Assessment tasks for a standard (1.0) or half-standard (0.5) unit must be informed by the Achievement Standards.

Advice

- It is recommended that the total component of unsupervised tasks be no greater than 30%.
- For tasks completed in unsupervised conditions, schools need to have mechanisms to uphold academic integrity, for example, student declaration, plagiarism software, oral defence, interview, other validation tasks.

Achievement Standards

These achievement standards have been written for the Bridging Numeracy A course only. The A standard reflects the ACSF Level Three standard. B and C standards reflect students who are working toward ACSF 3, but who are not yet proficient or consistent in their proficiency. The M achievement standards are taken from the Mathematics Framework. These achievement standards should be used for both years eleven and twelve.

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 for Bridging Numeracy A- Years 11 and 12

	A	B	C	D	E
Concepts and Techniques	• comprehends and interprets independently everyday mathematical information that is embedded in familiar and routine texts and selects relevant information independently to consistently solve ACSF level 3 mathematical problems with a number of steps and some abstraction	• comprehends and interprets everyday mathematical information that is embedded in familiar and routine texts and selects relevant information to solve increasingly complex mathematical problems at ACSF levels 2 and 3 with a number of steps and some abstraction	• comprehends everyday mathematical information that is embedded in familiar and routine texts and to solve mathematical problems with minimal direction with a number of steps	• comprehends some everyday mathematical information that is embedded in familiar and routine texts and to solve mathematical problems with direction	• relies on support to identify mathematical information that is embedded in familiar and routine texts to solve problems with direction
	• selects from and uses a variety of developing mathematical and problem-solving strategies to consistently solve ACSF level 3 mathematical problems, with some specialisation, independently in some less familiar contexts and a range of familiar contexts	• selects from and uses a variety of developing mathematical and problem-solving strategies to solve increasingly complex mathematical problems at ACSF levels 2 and 3 in a range of familiar contexts, and demonstrates some specialisation in solving problems in familiar contexts	• uses a variety of developing mathematical and problem-solving strategies as directed to solve mathematical problems independently in range of familiar contexts	• uses provided mathematical and problem-solving strategies to solve mathematical problems in a few familiar contexts with some independence	• relies on support to solve mathematical problems in familiar contexts using mathematical strategies
	• solves ACSF level 3 mathematical problems involving a number of steps consistently and independently in a range of familiar and some less familiar contexts	• solves solve increasingly complex mathematical problems at ACSF levels 2 and 3 involving a number of steps independently in a range of familiar contexts	• solves mathematical problems involving a number of steps as directed in a range of familiar contexts	• solves mathematical problems involving a number of steps as directed in a few familiar contexts	• relies on support to solve mathematical problems involving a number of steps in a few familiar contexts
	• comprehends routine mathematical texts that includes some unfamiliar elements, embedded information, abstraction, and specialised vocabulary when solving ACSF level 3 mathematical problems accurately	• comprehends routine mathematical texts that includes some unfamiliar elements and specialised vocabulary when solving solve increasingly complex mathematical problems at ACSF levels 2 and 3	• uses information from routine mathematical texts and comprehends some familiar specialised vocabulary when solving mathematical problems	• uses information from routine mathematical texts with some success when solving mathematical problems	• relies on support to use routine mathematical texts when solving mathematical problems
	• works independently and uses own familiar support resources drawing on own hands-on, in-context materials, personal experience, mathematical and other prior knowledge to solve ACSF level 3 mathematical problems consistently	• works independently and uses provided support resources drawing on own hands-on, in-context materials, personal experience, and mathematical knowledge to solve increasingly complex mathematical problems at ACSF levels 2 and 3	• uses provided support resources drawing on own hands-on, in-context materials and mathematical knowledge to solve mathematical problems	• uses provided support resources drawing on teacher assistance and mathematical knowledge to solve mathematical problems	• relies on support to use provided support resources drawing on fragments of mathematical knowledge to solve mathematical problems
Reasoning and communication	• works independently and using a blend of personal 'in-the-head' methods and formal pen and paper methods to calculate and uses calculator/technological processes and tools to undertake the problem-solving process	• works using a blend of personal 'in-the-head' methods and formal pen and paper methods to calculate and uses calculator/technological processes and tools to undertake the problem-solving process with prompting	• works using a blend of personal 'in-the-head' methods and formal pen and paper methods to calculate and uses calculator/technological processes and tools to undertake the problem-solving process with step-by-step written instruction	• uses directed methods including a blend of personal 'in-the-head' methods and formal pen and paper methods to calculate and uses calculator/technological processes and tools to undertake the problem-solving process with some verbal instruction	• relies on support to use a blend of personal 'in-the-head' methods and formal pen and paper methods to calculate and uses calculator/technological processes and tools undertake the problem-solving process with step-by-step verbal instruction
	• uses a combination of both informal and formal oral mathematical and general language to present and discuss the mathematical and problem-solving process and result accurately and independently in familiar and less familiar contexts	• uses a combination of both informal and formal oral mathematical and general language to present and discuss the mathematical and problem-solving process and results in familiar contexts	• uses oral mathematical and general language as directed to present and discuss the mathematical and problem-solving process and results in familiar contexts	• uses oral mathematical and general language as directed to present and discuss the mathematical and problem-solving process and results in familiar contexts with some support	• relies on support to report orally on the mathematical and problem-solving process and results in familiar contexts
	• report on mathematical and problem-solving process using both informal and formal written ACSF level 3 mathematical language and symbols, and general language, consistently, accurately, and independently in familiar and less familiar contexts	• report on mathematical and problem-solving process using both informal and formal written ACSF level 2 and 3 mathematical language and symbols, and general language in familiar and less familiar contexts	• report on mathematical and problem-solving process using written mathematical language and symbols as directed and general language accurately in familiar contexts	• report on mathematical and problem-solving process using written mathematical language and symbols as directed and general language in familiar contexts with some support	• relies on support to report in written/visual formats on the mathematical and problem-solving process and results in familiar contexts
	• selects and uses a combination of both formal and informal symbolism, diagrams, graphs, and conventions relevant to ACSF level 3 mathematical knowledge consistently, independently, and accurately to present solutions	• selects and uses a combination of both formal and informal symbolism, diagrams, graphs, and conventions relevant to the mathematical knowledge accurately to present solutions	• uses symbolism, diagrams, graphs, and conventions relevant to the mathematics studied to present solutions	• uses symbolism, diagrams, graphs, and conventions as directed to present solutions	• relies on support to use symbolism, diagrams, graphs, and conventions as directed to present solutions

Achievement Standards for Bridging Numeracy M – 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 and Techniques	• applies numeracy skills in a variety of contexts to routine and non-routine problems, with independence • uses digital technologies effectively to solve routine and non-routine problems in a variety of contexts, with independence	• applies numeracy skills in a variety of contexts to routine and non-routine problems, with some independence • uses digital technologies appropriately to solve routine and non-routine problems in a variety of contexts, with some independence	• applies numeracy skills in some contexts to routine and non-routine problems, with assistance • uses digital technologies appropriately to solve routine problems in limited contexts, with assistance	• applies simple numeracy skills in limited contexts to routine problems, with repeated cueing • uses digital technologies to solve routine problems in structured contexts, with repeated cueing	• applies simple numeracy skills in structured contexts, with direct instruction • uses digital technologies to solve routine and problems in structured contexts, with direct instruction
Reasoning and Communications	• represents numeracy skills in numerical and graphical form in routine and non-routine problems in a variety of contexts, with independence • communicates mathematical information in oral, written and/or multimodal forms, using appropriate language, with independence • reflects with insight on own thinking and learning in mathematics, with independence	• represents numeracy skills in numerical and graphical form in routine and non-routine problems, with some independence • communicates mathematical information in oral, written and/or multimodal forms, using appropriate language, with some independence • reflects on own thinking and learning in mathematics, with some independence	• represents numeracy skills in numerical and graphical form in some routine and non-routine problems, with assistance • communicates mathematical information in oral, written and/or multimodal forms, using appropriate language, with assistance • reflects on own thinking and learning in mathematics, with assistance	• represents simple numeracy skills in numerical or graphical form in routine problems, with repeated cueing • communicates simple mathematical information in oral, written and/or multimodal forms, using appropriate language, with repeated cueing • reflects on own thinking and learning in mathematics, with repeated cueing	• represents simple numeracy skills in numerical or graphical form in structured contexts, with direct instruction • communicates simple mathematical information in oral, written and/or multimodal forms, using appropriate language, with direct instruction • reflects on own thinking and learning in mathematics, with frequent prompting

Practical Numeracy — Value: 1.0

Practical Numeracy a — **Value 0.5**

Practical Numeracy b — **Value 0.5**

Unit Description

Students learn about the versatility and practical applications of mathematics in personal, workplace and social contexts. Students will study numeracy in the workplace, workplace problem solving, and be empowered to interpret mathematics pertaining to pay and conditions. Students will be able to effectively identify, interpret and use mathematical and problem-solving strategies in workplace situations with confidence and flexibility. Students practice transferring these skills to other personal, social, or academic situations. Students learn to identify when a problem is making use of quantitative thinking and skills. They build a disposition of understanding when and how to use their mathematical skills, including identifying when to make the contextual leap to apply quantitative skills to both familiar and unfamiliar problems.

Specific Unit Goals

This unit should enable students to:

A Course	M Course
• identify the versatility and practical applications of mathematics and interpret in personal, workplace and social contexts • identify, interpret, and use mathematical and problem-solving strategies in workplace situations • apply a disposition of understanding when and how to use their mathematical skills • apply quantitative skills to both familiar and unfamiliar problems	• identify the versatility and practical applications of mathematics and interpret in personal, workplace or social contexts • identify, interpret, and use mathematical and problem-solving strategies in workplace situations • apply an understanding of when and how to use their mathematical skills for both familiar and unfamiliar problems

Content Descriptions

All knowledge, understanding and skills below must be delivered:

A Course	M Course
Concepts and Techniques	
• identify the versatility and practical applications of mathematics and interpret in personal, workplace and social contexts e.g. simple trade quotation, shopping the sales, splitting the bill, best buys	• identify the versatility and practical applications of mathematics and interpret in personal, workplace or social contexts e.g., shopping the sales, splitting the bill
• identify, interpret, and use mathematical and problem-solving strategies in workplace situations e.g., order of operations; fractions/decimals/ percentages and converting between equivalents of these	• identify, interpret, and use mathematical and problem-solving strategies in workplace situations e.g., order of operations; benchmark fractions/decimals/percentages conversions

A Course	M Course
• apply quantitative skills to both familiar and unfamiliar problems, for example, increasing a recipe for more people, party planning, arrival times across time zones	• apply quantitative skills to both familiar and unfamiliar problems, for example, increasing a recipe for more people, party planning
• comprehend workplace problems to use numeracy in context, for example, measuring and calculating in trade quotes using 2D and 3D shapes, mix tint ratios, tallying the till	• comprehend workplace problems to use numeracy in context, for example, measuring and calculating in trade quotes, mix tint ratios, tallying the till
• apply a disposition of confidence and understanding when and how to use their mathematical skills, for example, measuring area, volume, and costs	• apply an understanding of when and how to use their mathematical skills, for example, measuring area, volume, and costs
Reasoning and Communication	
• work independently and using a blend of personal 'in-the-head' methods and formal pen and paper methods to make calculations, for example, change giving simulations, converting units of measurement	• work using a blend of personal 'in-the-head' methods and formal pen and paper methods to make calculations, for example, change giving simulations, converting units of measurement
• use calculator/technological processes and tools to undertake the problem-solving process, for example, order of operations on a calculator, spreadsheet summary functions, online survey	• use calculator/technological processes and tools to undertake the problem-solving process, for example, order of operations on a calculator, spreadsheet summary functions
• apply mathematical problem-solving skills in familiar and less familiar contexts, for example, comparing results, estimation, translating problems into mathematical expression	• apply mathematical problem-solving skills in familiar and less familiar contexts, for example, comparing results, estimation, translating problems into mathematical expression
• use a combination of both informal and formal oral mathematical language to present and discuss the mathematical and problem-solving process and results, for example, explain costs to clients, justify a trade quotation, disputing a bill	• use a combination of both informal and formal oral mathematical language to present and discuss the mathematical and problem-solving process and results, for example, disputing a bill, splitting the cost of a present for a friend
• apply communication and other transferable works skills in familiar and less familiar contexts, for example, solving problems in a group, negotiating with a classmate or teacher, challenge others appropriately, discussing fair pay rates	• apply communication and other transferable works skills in familiar and less familiar contexts, for example, solving problems in a group, negotiating with a classmate or teacher, negotiate fair payment
• use writing skills to report on mathematical problem-solving process and results, for example, appropriate use of mathematical notation, applying generic conventions to chosen format	• use writing skills to report on mathematical problem-solving process and results, for example, appropriate use of mathematical notation, applying generic conventions to chosen format

A Course	M Course
• select and use a combination of both formal and informal symbolism, including, diagrams, tables, and conventions	• select and use a combination of both formal and informal symbolism, including, diagrams, tables, and conventions
Reflection	
• reflect on learning habits and consider improvements • reflect on mathematical learning and utility to day-to-day life, for example, learning journals	• reflect on learning habits and consider improvements • reflect on mathematical learning and utility to day-to-day life, for example, learning journals

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.

Techno-mathematical Skills — Value: 1.0

Techno-mathematical Skills a — **Value 0.5**

Techno-mathematical Skills b — **Value 0.5**

Unit Description

Students learn to use and manipulate quantitative information with a focus on data literacy and technical software skills. Students will study personal financial numeracy. Students will be able to effectively identify, interpret and use mathematical and problem-solving strategies and tools in the management of their personal or work life to make informed and well-reasoned financial decisions. Students learn to communicate mathematical understanding and decisions using spreadsheets. Students build a disposition of confidence and calculated risk, using their understanding of data literacy, sense of number and sense of error, including knowing when to make use of physical, and digital tools in service of their quantitative goals.

Specific Unit Goals

This unit should enable students to:

A Course	M Course
• use and manipulate quantitative information with a focus on data literacy and technical software skills	• use quantitative information with a focus on data literacy and technical software skills
• identify, interpret, and use mathematical and problem-solving strategies and tools in the management of personal or work life to make informed and well-reasoned financial decisions	• identify and use mathematical and problem-solving strategies and tools in the management of personal or work life to make informed and well-reasoned financial decisions
• apply a disposition of confidence and calculated risk, using their understanding of data literacy, sense of number and sense of error	• apply an understanding of calculated risk, using their understanding of data literacy, sense of number and sense of error
• use physical and digital tools in service of their quantitative goals and communicate mathematical understanding and decisions using spreadsheets	• use digital tools in service of their quantitative goals and communicate mathematical understanding

Content Descriptions

All knowledge, understanding and skills below must be delivered:

A Course	M Course
Concepts and Techniques	
• use and manipulate quantitative information with a focus on data literacy and technical software skills, for example, create a personal or business budget on a spreadsheet, present quantitative data ethically and transparently using spreadsheets	• use quantitative information with a focus on data literacy and technical software skills, for example, create a personal or business budget on a spreadsheet

A Course	M Course
• identify, interpret, and use mathematical and problem-solving strategies and tools in the management of personal or work life to make informed and well-reasoned financial decisions, for example, graphs, tables, and interpret information	• identify and use mathematical and problem-solving strategies and tools in the management of personal or work life to make informed financial decisions, for example, graphs, tables
• apply quantitative skills to both familiar and unfamiliar problems, for example, compare mobile phone offers, assess payday lender finance, compare costs of delayed payment products and costs to credit cards and savings plans	• apply quantitative skills to problems, for example, compare mobile phone offers, assess payday lender finance, compare costs of delayed payment products and costs to credit cards and savings plans
• use software and applications to solve problems and explain solutions, for example, use spreadsheets to organise and calculate, process provided data and report on a quotation, or scenario, use generative AI to work on problems and validate answers, file management systems	• use software and applications to solve problems and identify solutions, for example, use spreadsheets to organise and calculate, file management systems
• apply a disposition of confidence and calculated risk, using their understanding of data literacy, sense of number and sense of error, for example, serve customers with mental and technology supported calculations, dispute mathematical conclusions	• apply an understanding of calculated risk, using their understanding of data literacy, sense of number and sense of error, for example, serve customers with mental and technology supported calculations, discuss mathematical conclusions
Reasoning and Communication	
• work independently and using a blend of personal 'in-the-head' methods and formal digital methods to calculate, for example, interpret a trend, visual verification of digital output, check for AI confabulation	• work using a blend of personal 'in-the-head' methods and formal pen and paper methods to make calculations, for example, identify a trend, visual verification of digital output
• use calculator/technological processes and tools to undertake the problem-solving process, for example, use specific spreadsheet formulae to perform operations for personal or work life	• use calculator/technological processes and tools to undertake the problem-solving process, for example, use specific spreadsheet formulae to perform basic operations for personal or work life
• apply mathematical problem-solving skills in familiar and less familiar contexts, for example, comparing results, estimation, translating problems into mathematical expression	• apply mathematical problem-solving skills in familiar and less familiar contexts, for example, comparing results, estimation, translating one step problems into mathematical expression

A Course	M Course
• use a combination of both informal and formal oral mathematical and general language to present and discuss the mathematical and problem-solving process and results, for example, justify use of spread sheet formulae in the calculation of trade quotations and bills, explain visual representations	• use a combination of both informal and formal oral mathematical language to present and discuss the mathematical and problem-solving process and results, for example, use a simple spread sheet formulae in the calculation of bills, identify information in visual representations
• apply communication and other transferable works skills in familiar and less familiar contexts, for example, office administration skills, presentation skills, client service skills, file management skills and conventions	• apply communication and other transferable works skills in familiar and less familiar contexts, for example, office administration skills, file management skills and conventions
• use writing skills to report on mathematical problem-solving process and results, for example, appropriate use of mathematical/ spreadsheet notation, applying generic conventions to chosen format, language of data representation	• use writing skills to report on mathematical problem-solving process and results, for example, appropriate use of mathematical/ spreadsheet notation
• select and use a combination of both formal and informal symbolism, including, diagrams, tables, graphs, and conventions, for example, formatting and labelling graphs	• select and use a combination of both formal and informal symbolism, including, diagrams, tables, and conventions
Reflection	
• reflect on learning habits and consider improvements • reflect on mathematical learning and utility to day-to-day life, for example, learning journals	• reflect on learning habits and consider improvements • reflect on mathematical learning and utility to day-to-day life, for example, learning journals

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.

Making Informed Numeracy Decisions — Value: 1.0

Making Informed Numeracy Decisions a — **Value 0.5**
Making Informed Numeracy Decisions b — **Value 0.5**

Unit Description

Students learn how to interpret quantitative information to inform decision-making in personal and societal contexts. Students will be able to effectively identify, interpret and use mathematical and problem-solving strategies for managing their own lives, including common experiences such as, probability-based decisions, assessing the accuracy of claims made in the media, assessing contract terms, tenancy, or the mathematics of transport and travel. They will understand how information is represented to favour particular points of view or interests and build a disposition toward implementing their critical quantitative skills when faced with both familiar and unfamiliar information presented by online, media and commercial sources.

Specific Unit Goals

This unit should enable students to:

A Course	M Course
• interpret quantitative information to inform decision-making in personal and societal contexts • identify, interpret, and use mathematical and problem-solving strategies for managing their own lives • understand how information is represented to favour particular points of view, interests, or probability-based decisions • apply a disposition toward implementing their critical quantitative skills when faced with both familiar and unfamiliar information	• apply quantitative information to inform decision-making in personal or societal contexts • Identify and use mathematical and problem-solving strategies for managing their own lives • understand how information is represented to favour particular points of view, interests, or probability-based decisions • apply quantitative skills to provided information

Content Descriptions

All knowledge, understanding and skills below must be delivered:

A Course	M Course
Concepts and Techniques	
• interpret quantitative information to inform decision-making in personal and societal contexts, for example, chance in weather forecasts, gambling odds, interprets bills and charges, travel, and car costs • identify, interpret, and use mathematical and problem-solving strategies for managing their own lives, for example, tax rates, interest rates, superannuation accrual, assessing policies in elections	• use quantitative information to inform decision-making in personal and societal contexts, for example, gambling odds, identify information from bills and charges, travel, and car costs • identify and use mathematical and problem-solving strategies for managing their own lives, for example, tax rates, interest rates, superannuation accrual, assessing policies in elections

A Course	M Course
• apply quantitative skills to both familiar and unfamiliar problems, for example, compares costs of items in different containers including usage and wastage, child support proportions	• apply quantitative skills to both familiar and unfamiliar problems, for example, compares costs of items, child support proportions, NDIS supports
• understand how information is represented to favour particular points of view or interests, for example, work out true costs versus advertised costs, interpret statistical claims in media, loan comparison rates	• understand how advertised costs may not be the same as true costs
• apply a disposition of confidence toward implementing their critical quantitative skills when faced with both familiar and unfamiliar information, for example, measure fitness over time using spreadsheets and graphs, interpreting nutritional information, tenancy tribunal disputes, verify product claims	• apply an understanding of quantitative skills when using information provided, for example, use nutritional information, NDIS disputes, verify product claims
Reasoning and Communication	
• work independently and using a blend of personal 'in-the-head' methods and formal pen and paper methods to make calculations, for example, estimated transport costs and times, likelihood of events	• work using a blend of personal 'in-the-head' methods and formal pen and paper methods to make calculations, for example, estimated transport costs and times, likelihood of events
• use calculator/technological processes and tools to undertake the problem-solving process, for example, online comparison tools, translating claims into common terms, assess reliability of information sources	• use calculator/technological processes and tools to undertake the problem-solving process, for example, online comparison tools
• apply mathematical problem-solving skills in familiar and less familiar contexts e.g., comparing results, estimation, translating problems into mathematical expression	• apply mathematical problem-solving skills e.g., comparing results, estimation, translating one-step problems into mathematical expression
• use a combination of both informal and formal oral mathematical and general language to present and discuss the mathematical and problem-solving process and results, for example, defending research on comparisons undertaken, negotiating terms, bargaining, negotiate shared costs when travelling	• use a combination of both informal and formal oral mathematical language to present and discuss the mathematical and problem-solving process and results, for example, describing research on comparisons, negotiate shared costs when travelling
• apply communication and other transferable works skills in familiar and less familiar contexts, for example, collaborating on solutions, make a recommendation	• apply communication and other transferable works skills, for example, collaborating on solutions, make a recommendation

A Course	M Course
• use writing skills to report on mathematical problem-solving process and results, for example, formal letters for refunds/disputes/claims, summarising information to support decision making • select and use a combination of both formal and informal symbolism, diagrams, graphs, and conventions, for example, timetables, comparative tables and graphs, itineraries	• use writing skills to report on mathematical problem-solving process and results, for example, formal letters for refunds/disputes/claims, summarising information to support decision making • select and use a combination of both formal and informal symbolism, including, diagrams, tables, and conventions, for example, timetables, comparative tables and graphs, itineraries
Reflection	
• reflect on learning habits and consider improvements • reflect on mathematical learning and utility to day-to-day life, for example, learning journals	• reflect on learning habits and consider improvements • reflect on mathematical learning and utility to day-to-day life, for example, learning journals

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.

Interdisciplinary Mathematics — Value: 1.0

Interdisciplinary Mathematics a — **Value 0.5**

Interdisciplinary Mathematics b — **Value 0.5**

Unit Description

Students use numeracy skills required for one or more interdisciplinary contexts, such as maintaining personal and supporting others' health, sports, the built environment, or personal areas of interest such as volunteering, community work, or gaming. Students will be able to effectively identify, interpret and use mathematical and problem-solving strategies to make informed and well-reasoned decisions within a discipline or circumstance. Students will transfer their quantitative skills to unfamiliar problems and areas of study and build a disposition of valuing the link between numeracy and practical application of quantitative skills in contexts that link to their interests.

Specific Unit Goals

This unit should enable students to:

A Course	M Course
• use numeracy skills required for one or more interdisciplinary contexts • identify, interpret, and use mathematical and problem-solving strategies to make informed and well-reasoned decisions within a discipline or circumstance • transfer their quantitative skills to unfamiliar problems and areas of study • apply a disposition of using numeracy in practical application of quantitative skills in contexts that link to their interests	• use numeracy skills required for one or more interdisciplinary contexts • Identify and use mathematical and problem-solving strategies to make informed decisions within a discipline or circumstance • transfer their quantitative skills to problems and areas of study • apply numeracy in a practical application of quantitative skills in contexts that link to their interests

Content Descriptions

All knowledge, understanding and skills below must be delivered:

A Course	M Course
Concepts and Techniques	
• use numeracy skills required for one or more interdisciplinary contexts, for example, collects information on a social issues and report statistics with tables/graphs/prose; weather measurement and statistics • identify, interpret, and use mathematical and problem-solving strategies to make informed and well-reasoned decisions within a discipline or circumstance, for example, use rate of application to work out quantities required, simple productivity measurement, orienteering with maps	• use numeracy skills required for one or more interdisciplinary contexts, for example, collects and records numerical information on an area of interest, sport statistics • Identify and use mathematical and problem-solving strategies to make informed decisions within a discipline or circumstance, for example, use rate of application to work out quantities required, navigating with maps

A Course	M Course
• apply quantitative skills to both familiar and unfamiliar problems, for example, use tech devices to measure and record data such as blood pressure, temperature, heart rate and interpret	• apply quantitative skills to problems, for example, use tech devices to measure and record data such as blood pressure, temperature, heart rate
• transfer their quantitative skills to unfamiliar problems and areas of study e.g., WHS calculations of accident rates and risk, complex trade job quotations	• transfer their quantitative skills to problems and areas of study e.g., WHS calculations of accident rates and risk
• apply a disposition of using numeracy in practical application of quantitative skills in contexts that link to their interests, for example, compare travel costs, opportunity cost, value for money/value as a financial and non-financial concept	• apply numeracy in practical application of quantitative skills in contexts that link to their interests, for example, compare travel costs, value for money
Reasoning and Communication	
• work independently and using a blend of personal 'in-the-head' methods and formal pen and paper methods to make calculations, for example, nutritional health data analysis, rough versus precise unit conversions, plotting a route on a map using thinking networks for efficient delivery	• work using a blend of personal 'in-the-head' methods and formal pen and paper methods to make calculations, for example, identify nutritional health data, rough versus precise unit conversions, plotting a route on a map
• use calculator/technological processes and tools to undertake the problem-solving process, for example, probability in online games, tracking apps, species population estimates in biology, investigating biomechanical efficiency	• use calculator/technological processes and tools to undertake the problem-solving process, for example, probability in online games, tracking apps
• apply mathematical problem-solving skills in familiar and less familiar contexts e.g., comparing results, estimation, translating problems into mathematical expression	• apply mathematical problem-solving skills e.g., comparing results, estimation, translating one-step problems into mathematical expression
• use a combination of both informal and formal oral mathematical and general language to present and discuss the mathematical and problem-solving process and results, for example, product pitch, fund raising project proposal, deciding on further education and job options	• use a combination of both informal and formal oral mathematical language to present and discuss the mathematical and problem-solving process and results e.g., fund raising project proposal, deciding on further education, job options and living situations
• apply communication and other transferable works skills in familiar and less familiar contexts, for example, project planning and management, project presentation, budgeting, data analysis, cost analysis	• apply communication and other transferable works skills, for example, project planning, project presentation, budgeting

A Course	M Course
• use writing skills to report on mathematical problem-solving process and results, for example, report writing, project report, summarisation of opportunity and costs, justifying cost choices • select and use a combination of both formal and informal symbolism, diagrams, graphs, and conventions, for example, mapping and map keys, traversing a network, cash flow statement conventions, profit, and loss statement symbolic conventions	• use writing skills to report on mathematical problem-solving process and results, for example, report writing, project report, describe cost choices • select and use a combination of both formal and informal symbolism, including, diagrams, tables, and conventions, for example, mapping and map keys, reading bank statements and bills
Reflection	
• reflect on learning habits and consider improvements • reflect on mathematical learning and utility to day-to-day life, for example, learning journals	• reflect on learning habits and consider improvements • reflect on mathematical learning and utility to day-to-day life, for example, learning journals

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.

Units from this course may be combined with units from *Essential Mathematics A/M,* of similar course classification, to form a minor or major course.

Prerequisites for the course or units within the course

BSSS *Bridging Literacy* and *Bridging Numeracy* courses are designed to support students to achieve minimum standards of the Australian Core Skills Framework (ACSF) level 3 by the conclusion of their study and are aimed at students who have not yet achieved this standard and are unlikely to do so without targeted support.

Eligibility criteria for *Bridging Literacy* and *Bridging Numeracy* are as follows:

Students must meet the following criteria to be eligible to undertake the Bridging Literacy and Numeracy courses:

- Standardised test (Progressive Achievement Tests (PAT), Online Literacy Numeracy Assessment (OLNA), or equivalent, indicates that student has not met ACSF 3
- No standardised testing data available but literacy or numeracy level (as applicable) of ACSF 1 or 2 is imputed with strong evidence
- Student does not meet any of the exclusions.

Students are ineligible if they meet any of these exclusions:

- Student attained “strong” or “exceeding” on NAPLAN in Year 9
- Student attained ACSF 3 or equivalent on a standard test (e.g., PAT, OLNA)
- No standardised testing data available but literacy or numeracy level (as applicable) of ACSF 3 or above is imputed with strong evidence.

Strong evidence may include:

- An Individualised Learning Plan (ILP) process that includes summative assessed samples which demonstrate that the student is not meeting ACSF 3 and requires significant support to achieve this goal
- Teacher nomination based on the student’s performance, including a signed declaration that this is the academically appropriate course for this student

Evidence must be kept on file by the school and produced if requested.

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.

System Moderation

System moderation begins in schools whereby teachers cooperate to develop assessment, and grade and score student assessment according to the relevant curriculum.

Moderation Day is an essential component of the ACT senior secondary system which empowers school autonomy in curriculum and assessment. Moderation Day is a collaborative and professional event whereby schools undertake system quality assurance activities on behalf of their current and future students. Moderation Day fosters and enriches the development of quality assessment and validates student achievement. Continued best practice in teaching and learning is ensured through the formation of valid, constructive, and detailed feedback.

System Moderation:

- provides comparability of school-based assessment
- forms the basis for valid and reliable assessment in senior secondary schools

- involves the ACT Board of Senior Secondary Studies (BSSS) and schools in cooperation and partnership
- maintains the integrity of the ACT Senior Secondary Certificate.

The Moderation Model

Moderation within the ACT senior secondary system encompasses structured, consensus-based peer review of Unit Grades and quality of assessment for all BSSS courses twice per year. In addition to System Moderation, there is statistical moderation of course scores.

Moderation by Structured, Consensus-based Peer Moderation

Consensus-based peer moderation involves the review of student assessment against system wide criteria and standards and the validation of Unit Grades. This is done by matching student performance with the Framework Achievement Standards. In addition, feedback will be provided on the quality of the task.

Preparation for Structured, Consensus-based Peer Review

Schools retain originals or copies of student assessment evidence completed in the delivery of the unit and all unit documentation. Student assessment evidence must be sufficient to allow reviewing teachers to make an accurate judgment of grade standard. Schools will use ACS to present this information for System Moderation. Criteria for each Moderation Day will be communicated to schools in the proceeding calendar year.

Feedback from System Moderation

Feedback is provided to schools to affirm good practice and inform continuous improvement. This feedback is based on the BSSS Quality Assessment Guidelines and relevant course documents. It is expected that schools engage with feedback and address any longitudinal trends as outlined in the *BSSS Policy and Procedures Manual*.

Appendix B – Course Developers

Name	College
Dr Sophia Afghan	St John Paul II College
Lisa Green	Radford College
Charles McIntosh	Hawker College
John Talbot	Canberra Institute of Technology

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:	Bridging Numeracy
Classification/s:	A M
Accredited from:	2025
Framework:	