DEPARTMENT OF EDUCATION
learners first

Professional Studies Technologies

Information Systems and Digital Technologies 2

COURSE DOCUMENT

DRAFT

PHASE 3 CONSULTATION

Catholic Education Tasmania

INDEPENDENT SCHOOLS TASMANIA

Years 9 to 12 Learning

Tasmanian Government

Table of Contents

Phase 3 Consultation Draft Published: March 2021

Information Systems and Digital Technologies*, 150 hours – Level 2

*There is a proposed name change for this course to *Digital Management and Leadership*.

This course is the Level 2 component of the *Digital Management and Leadership** program.

Aims

The purpose of Years 9 to 12 Education is to enable all students to achieve their potential through Years 9 to 12 and beyond in further study, training or employment.

Years 9 to 12 Education enables: Personal Empowerment, Cultural Transmission, Preparation for Citizenship and Preparation for Work.

This course supports the principles of Access, Agency, Excellence, Balance, Support and Achievement as part of a range of programs that enables students to access a diverse and highly flexible range of learning opportunities suited to their level of readiness, interests and aspirations.

Courses aligned to the Years 9 to 12 Curriculum Framework belong to one of the five focus areas of Discipline-based Study, Transdisciplinary Projects, Professional Studies, Work-based Learning and Personal Futures.

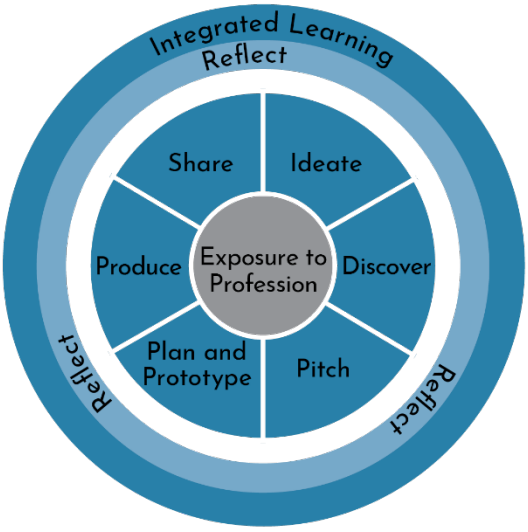
*Digital Management and Leadership** Level 2 is a Professional Studies course.

Focus Area – Professional Studies

Professional Studies bridges academic courses and career-related study to provide students with a combination of academic and practical knowledge, skills and understanding to pursue a particular pathway of interest. Courses integrate exposure to professional environments, processes and practice through inquiry based learning. Professional Studies reflect professional processes and standards and provide learners with an equivalent experience to that of someone working within that profession Professional Studies enhances students cognitive capacity, efficacy, creativity and craftsmanship in readiness for higher education, internships, apprenticeships, or work in a designated field of interest. Professional Studies courses connect with recognised professional study pathways and contextually align with key Tasmanian industry sectors.

Professional Studies courses have three key features that guide teaching and learning:

- exposure to professional practice
- ideation, research, discovery and integrated learning
- production and sharing replicating a professional paradigm.



In this course learners will do this by developing an understanding of how individuals and or organisations manage, use and organise data to solve a range of information problems.

The ability to embrace digital transformation and put it to work is becoming ever more important. By undertaking this course, learners will develop knowledge and understanding of transferable tools and techniques that support problem solving and project management. Learners will use a variety platforms and applications to solve problems, creatively manage and retrieve information and communicate effectively.

Learners will replicate a professional paradigm by working in collaborative teams, responding to client-driven briefs, conducting user-centred research and communicating using professional standards. Opportunities for work exposure are strongly encouraged.

Rationale

The technology landscape is dynamic and evolving and information systems play a critical role in organisations and businesses, enabling opportunities for innovative and enterprising individuals to respond to emerging digital transformation through the analysis, creation, implementation, testing and management of information systems. The *Digital Management and Leadership** program will enable learners to be well-informed, analytical consumers of digital information and technology and to become confident creators of systems solutions.

Through studies in *Digital Management and Leadership**, learners develop an understanding of the importance of data and information and how it is processed and communicated through hardware and software applications to solve a range of information problems. They will investigate information systems; past, current and emerging and engage in an exploration of the IT profession and the wide-ranging career opportunities that exist within organisations.

Through authentic project work using a systems development process, learners studying *Digital Management and Leadership** will gain a broad range of skills including project management, collaboration, communication and critical and creative thinking. Students consider organisational or business needs and opportunities through the lens of both human-human and human–computer interactions and evaluate solutions from the perspective of user experience, considering security, social context, legal and ethical requirements and sustainability.

Study of *Digital Management and Leadership** will support students to develop an understanding of the impact of information Technologies on society both locally and globally and provides opportunities for learners to develop skills that will prepare them for a variety of post-school opportunities.

Integration of General Capabilities and Cross-Curriculum Priorities

The general capabilities addressed specifically in this course are:

- Critical and creative thinking
- Ethical understanding
- Information and communication technology capability
- Intercultural understanding
- Literacy
- Numeracy
- Personal and social capability

The cross-curriculum priorities enabled through this course are:

- Aboriginal and Torres Strait Islander Histories and Cultures
- Asia and Australia's Engagement with Asia
- Sustainability

Course Description

Digital Technologies are rapidly changing the way in which we live and work. There is a strong demand locally and globally for digital managers and leaders who understand existing, new and emerging Technologies.

Learners will explore the opportunities for digital managers and leaders within a wide range of organisations and context. Learners will be supported to develop a broad range of digital skills, alongside the acquisition of the general capabilities through the application and management of a user driven systems development lifecycle.

A project-based approach will enable learners to engage in creating solutions to realistic client/user or organisational problems in a range of contexts and develop an understanding of common project management methodologies. Learners will access the value and impact of new Technologies and will build an understanding of how information systems work together to enable our digital world to function.

Pathways

This course is designed for learners who are interested in studying project management and problem solving through the development of information systems.

*Digital Management and Leadership** Level 2 provides a foundation for *Digital Management and Leadership** Level 3. *Digital Management and Leadership** Level 2 furthers learner understandings established through the Australian Curriculum: Digital Technologies (p – 10).

This course complements senior secondary courses in computer science, business studies, economics, legal studies and learning through internship and appropriate courses from the learning areas of English, Mathematics and Science.

*Digital Management and Leadership** Level 2 provides a useful background to learners considering a wide range of future pathways including tertiary and vocational studies. Examples of possible future areas include but are not limited to: Information Technology; Business; Health; Law; Commerce; Engineering; Education; Arts; and Sciences.

Course Requirements

It is desirable that learners undertaking this course have the opportunity to work collaboratively (face-to-face and/or electronically).

Learners require access to the following resources to be able to demonstrate the outcomes:

- appropriate laptop, notebook or desktop computers
- printers
- internet
- a range of software tools including database management software, spreadsheet and or statistical software and software for creating multimodal presentations.

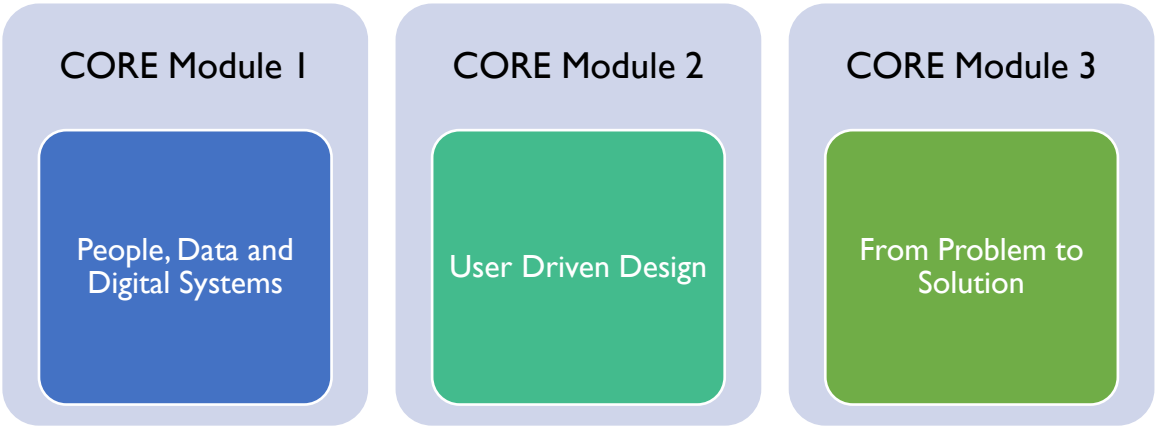
Additional resources may be required depending on provider-selected learning tasks.

Course Structure, Delivery and Progression

Structure

This course consists of three 50-hour modules.

Modules Available
Core Module 1: People, data and digital systems
Core Module 2: User driven design
Core Module 3: From problem to solution



Delivery

There is no specific recommended delivery sequence for the modules

Developmental Progression

Module 1 introduces the learner to key ideas, concepts, skills, knowledge and understanding. Module 2 enables the learner to build upon these key ideas, concepts, skills, knowledge and understanding. Module 3 enables the learner to further build on these key ideas, concepts, skills, knowledge and understanding.

The progression of learning is evidenced through assessment opportunities which provide feedback to promote further learning. A culminating performance of understanding is reflected in the final work requirements.

Module 1 - People, data and digital systems

This module introduces the foundation knowledge and skills required to problem solve, understand and create information systems solutions, project manage and identify the intra and interpersonal competences needed to effectively collaborate.

Module 1 Learning Outcomes

On successful completion of this module, learners will be able to:

1. apply and describe a systems development lifecycle to plan, analyse, design, develop and evaluate an information system to solve an identified problem
2. apply personal leadership and project management skills when working independently and collaboratively with others
3. describe and explain the components of an information system, and the inter-relationships between these components including security implications
4. describe the impact of existing, new and emerging technologies on people and information systems

Module 1 Content

Exposure to professional practice

- project management strategies
- personal leadership skills within collaborative teams
- safe work practices and procedures relevant to the use of digital technologies
- explore the components and characteristics of a variety of existing, new and emerging information systems.

Ideation, research, discovery and integrated learning

- use a basic systems development process to produce a solution:
  - analysis - begins with an investigative process. Who will use the system? How will they use the system, and for what purpose? What data will be used by the system? What data will the system generate as outputs? What constraints apply? What can be included, and what should not?
  - design - based on the Analysis stage, system and software design is considered. This may include considering hardware and system requirements and overall system architecture. The evaluation criteria are also developed.
  - development – configuration, coding, validation, testing and documentation are undertaken.
  - evaluation – establishes how well the system solves the problem or meets the needs identified in the Analysis stage.

Production and sharing replicating a professional paradigm.

- project skills
- research based multimodal presentation.

Learners will explore the components and characteristics of information systems. They will investigate existing, new and emerging technologies and evaluate the suitability of the components for particular tasks. Learners will consider system weakness and begin to explore system development by unpacking a basic Systems Development Lifecycle (SDLC) through a series of mini-projects. Learners will develop strategies for project management and consider the role and attributes of effective leaders within collaborative teams and as digital citizens.

Key knowledge

- components of digital systems
- the nature, function and interrelationship of data, hardware and software systems
- the importance and process of collecting, storing and communicating data and information
- how existing, new and emerging technologies are used to develop hardware and software solutions
- project management strategies
- leadership and group management within collaborative teams
- digital citizenship.

Key skills

- select and use appropriate hardware and software tools when developing information systems solutions
- create information through the use and analysis of data
- evaluate the development, implementation and management of projects
- communicate with an audience and end users.

Module 1 Work Requirements

The work requirements of a course are processes, products or performances that provide a significant demonstration of achievement that is measurable against the course's standards. Work requirements need not be the sole form of assessment for a module.

This module includes one (1) extended response and one (1) project as work requirements.

See Appendix 3 for summary of Work Requirement specifications for this course.

Module 1 Assessment

This module will assess criteria 1, 2, 3, 4.

Module 2 - User driven design

This module builds on the foundation knowledge and skills covered in module 1. The focus of the module centres on solving user problems through the application of SDLC working in collaborative teams (face-to-face and online).

Module 2 Learning Outcomes

On successful completion of this module, learners will be able to:

1. apply and describe a systems development lifecycle to plan, analyse, design, develop and evaluate an information system to solve an identified problem
2. apply personal leadership and project management skills when working independently and collaboratively with others

3. describe and explain the components of an information system, and the inter-relationships between these components including security implications
5. explain the role digital technologies play in societal and organisational change

Module 2 Content

Exposure to professional practice

- understanding the user
- investigate the role digital technologies play in societal and organisational change
- collaborative teams.

Ideation, research, discovery and integrated learning

- investigate and analyse a problem and produce a specification
- data collection, analysis and storage
- SDLC
- Prototyping.

Production and sharing replicating a professional paradigm

- communicate with a user/client to understand and analyse user experience (UX)
- develop solutions that meet user requirements
- document specifications and solutions
- evaluate solutions and their own performance.

Learners will explore the role of digital technologies and change. They will engage with at least one client/user to analyse a familiar problem and design and prototype a solution. The user may be identified for the class or learners may identify their own client/user (which may be a friend or family member) if they wish to explore a particular problem. Learners will be supported to reflect on their leadership and management skills and develop individual and group goals and strategies for improvement.

Key knowledge

- techniques for collecting data to determine user needs and requirements, such as interviews and surveys
- the characteristics of data and information, and the need for organisation and manipulation to facilitate its effective use
- the use of digital technologies for a range of purposes
- design tools and techniques for representing solution designs
- emerging trends in digital systems and the importance of innovation to organisations
- the components, characteristics and functions of information systems (including hardware, software and communication) that allow effective solutions to be achieved
- techniques for documenting the development of solutions.

Key skills

- intra and interpersonal skills
- investigate and analyse a problem and produce a specification
- design an effective solution
- select and use appropriate application software

- test and implement an effective ICT related system
- document specifications and solutions
- evaluate solutions and their own performance.

Module 2 Work Requirements

The work requirements of a course are processes, products or performances that provide a significant demonstration of achievement that is measurable against the course's standards. Work requirements need not be the sole form of assessment for a module.

This module includes one (1) extended response and one (1) product - solution pitch as work requirements as part of a broader project or projects.

See Appendix 3 for summary of Work Requirement specifications for this course.

Module 2 Assessment

This module will assess criteria 1, 2, 3, 5.

Module 3 - From problem to solution

This module centres around responding to a case study and implementing a scaffolded SDLC in small groups with learners undertaking roles within a project team. Learners will consider the social, ethical and legal issues related to digital technologies.

Module 3 Learning Outcomes

On successful completion of this module, learners will be able to:

1. apply and describe a systems development lifecycle to plan, analyse, design, develop and evaluate an information system to solve an identified problem
2. apply personal leadership and project management skills when working independently and collaboratively with others
3. describe and explain the components of an information system, and the inter-relationships between these components including security implications
6. explain the social, ethical, legal and/or sustainability issues related to digital technologies and their effects on the individual, society and the environment.

Module 3 Content

Exposure to professional practice

- analyse a client brief
- produce a specification brief based on identified criteria
- explore, test, and learn from failure
- project management
- collaborative teams.

Ideation, research, discovery and integrated learning

- investigate and analyse a problem
- computational and systems thinking
- use SDLC to produce a feasible solution
- use project management and problem-solving methodologies.

Production and sharing replicating a professional paradigm

- document project management and problem-solving methodologies
- reflective journal.

Learners will work in project teams to analyse a realistic or real-life problem. They will think critically and creatively to design a solution(s) before selecting and developing the solution that best meets the user requirements. Learners will evaluate their solution based on how well the system solves the problem or meets the needs identified in the analysis stage.

Learners will document the problem solving and project management strategies along with the development of their information systems solution and user specifications. Learners will reflect on their own thinking and clearly demonstrate their individual and collective responsibility when working in a team.

Key knowledge

- functions and capabilities of digital systems used by individuals and organisations
- economic issues involving emerging technologies, such as access, deskilling, job loss, misuse and sustainability
- the impact of current and emerging technologies, such as automation, cyberbullying and the decline of physical human interactions and interpersonal skills
- ethical issues arising from data and information security practices
- strategic planning in a professional and socially responsible manner.

Key skills

- investigate a problem, need or opportunity and identify potential users and purpose
- propose a range of methods to collect data for analysis
- analyse and document solution requirements to develop an innovative solution
- select and use appropriate design tools for generating solution designs
- develop an innovative solution using appropriate digital systems
- document the development of the solutions
- identify and discuss potential legal and ethical issues affecting the development of an innovative solution
- apply evaluation criteria and evaluate the efficiency and effectiveness of an innovative solution to meet a need or opportunity
- document, monitor and modify project plans
- ability to work independently and in collaborative teams in both physical and virtual environments.

Module 3 Work Requirements

The work requirements of a course are processes, products or performances that provide a significant demonstration of achievement that is measurable against the course's standards. Work requirements need not be the sole form of assessment for a module.

This module includes one (1) folio as work requirement.

See Appendix 3 for summary of Work Requirement specifications for this course.

Module 3 Assessment

This module will assess criteria 1, 2, 3, 6.

Assessment

Criterion-based assessment is a form of outcomes assessment that identifies the extent of learner achievement at an appropriate end-point of study. Although assessment – as part of the learning program – is continuous, much of it is formative, and is done to help learners identify what they need to do to attain the maximum benefit from their study of the course. Therefore, assessment for summative reporting to TASC will focus on what both teacher and learner understand to reflect end-point achievement.

The standard of achievement each learner attains on each criterion is recorded as a rating 'A', 'B', or 'C', according to the outcomes specified in the standards section of the course.

A 't' notation must be used where a learner demonstrates any achievement against a criterion less than the standard specified for the 'C' rating.

A 'z' notation is to be used where a learner provides no evidence of achievement at all.

Internal assessment of all criteria will be made by the provider. Providers will report the learner's rating for each criterion to TASC.

Criteria

	Module 1	Module 2	Module 3	Notes
Criteria Assessed	1,2,3,4	1,2,3,5	1,2,3,6	Three common in all modules and one focus criterion per module

The assessment for *Digital Management and Leadership** Level 2 will be based on the degree to which the learner can:

1. apply an iterative process to manage a systems development cycle
2. apply personal leadership and project management skills
3. apply knowledge and understanding of information systems
4. examine the impact of existing, new, and emerging technologies on people and the development of solutions using information systems
5. describe the interrelationships between digital technologies and change
6. describe how digital solutions are utilised and their impact on society

Standards

Criterion 1: apply an iterative process to manage a systems development cycle

Rating C	Rating B	Rating A
uses data and information to identify a limited range of needs and opportunities for the development of digital information systems	uses data and information to identify and describe a range of needs and opportunities for the development of digital information systems	effectively uses data and information to identify and analyse a wide-range of needs and opportunities for the development of digital information systems
designs a solution(s) in response to identified needs and opportunities, providing limited explanation to support ideas and choices	designs a quality solution(s) in response to identified needs and opportunities, providing some justification to support ideas and choices	designs a high-quality solution(s) in response to identified needs and opportunities, providing comprehensive justification to support ideas and choices
applies a limited range of technical concepts to create a digital solution or prototype and identifies some improvements based on testing	applies a range of technical concepts to create a feasible digital solution or prototype, describes testing and makes some improvements using an iterative process	applies a wide range of technical concepts to create a digital solution or prototype that adheres to the accepted standards and conventions, details testing and makes improvements using an iterative process
makes some conclusions about the suitability and appropriateness of the solution or prototype using evaluation criteria.	appraises the suitability and appropriateness of the solution or prototype using evaluation criteria identifying constraints on the solution.	critically appraises the suitability and appropriateness of the solution or prototype using evaluation criteria describing constraints on the solution.

Criterion 2: apply personal leadership and project management skills

Rating C	Rating B	Rating A
identifies personal leadership skills, roles and responsibilities required to work effectively within the IT sector	describes personal leadership skills, roles and responsibilities required to work effectively within the IT sector	explains personal leadership skills, roles and responsibilities required to work effectively within the IT sector
uses limited planning strategies to facilitate completion of key elements of tasks within agreed time frames	uses planning strategies to facilitate successful completion of tasks within agreed time frames	uses a range of planning and self-management strategies to enable the effective completion of tasks within agreed time frames
reflects on thinking, actions, and processes and explains inter and intrapersonal skills including planning, time management, use of appropriate techniques and strategies	reflects on thinking, actions and processes and analyses inter and intrapersonal skills including planning, time management, use of appropriate techniques and strategies	reflects with insight on thinking, actions and processes and evaluates inter and intrapersonal skills including planning, time management, use of appropriate techniques and strategies
communicates ideas using a limited range of evidence, specialised and/or technical language, and appropriate referencing.	communicates ideas appropriately using a range of evidence, specialised and/or technical language, and appropriate referencing.	communicates ideas with clarity using a wide range of evidence, specialised and/or technical language, and appropriate referencing.

Criterion 3: apply knowledge and understanding of information systems

Rating C	Rating B	Rating A
identify the components of systems, and their interconnectedness in order to rebuild, redesign and create applications	describe the components of systems, and their interconnectedness in order to rebuild, redesign and create applications	describe the components of systems, and explain their interconnectedness in order to rebuild, redesign and create applications
uses appropriate hardware and software to develop systems solutions	competently selects and uses appropriate hardware and software to develop systems solutions for specific user needs and purposes	proficiently selects and uses appropriate hardware and software to develop systems solutions for specific user needs and purposes
collects, interprets and communicates data and information appropriately	collects, stores, and communicating data and information	collects, authenticates and uses data from reputable sources
identifies how hardware and software manages, controls, and secures access to data in networked digital systems.	describes how hardware and software manages, controls, and secures access to data in networked digital systems.	explains how hardware and software manages, controls, and secures access to data in networked digital systems.

Criterion 4: examine the impact of existing, new, and emerging technologies on people and the development of solutions using information systems

Rating C	Rating B	Rating A
describes how historical developments have contributed to current and emerging systems solutions	explains how historical developments have contributed to current and emerging systems solutions	analyses how historical developments have contributed to current and emerging systems solutions
identifies innovative and emerging opportunities for digital solutions and technologies	describes innovative and emerging opportunities for digital solutions and technologies	describes and evaluates innovative and emerging opportunities for digital solutions and technologies
identifies how to manage safety and generally engages in positive, safe, legal and ethical behaviour when using digital tools and environments.	describes how to manage safety and frequently engages in positive, safe, legal and ethical behaviour when using digital tools and environments.	explains how to manage safety and consistently engages in positive, safe, legal and ethical behaviour when using digital tools and environments.

Criterion 5: describe the interrelationships between digital technologies and change

Rating C	Rating B	Rating A
identifies the role of digital innovation in societal and organisational change	describes the role of digital innovation in societal and organisational change	analyses the role of digital innovation in societal and organisational change
identifies the importance of secure information and privacy and identifies risk factors	describes the importance of secure information and privacy and identifies and manages risk factors	explains the importance of secure information and privacy and identifies and manages a range of risk factors
identifies current and future digital career opportunities.	examines current and future digital career opportunities.	analyses current and future digital career opportunities.

Criterion 6: describe how digital solutions are utilised and their impact on society

Rating C	Rating B	Rating A
identify legal, social and ethical considerations associated with the development of information systems	describe legal, social and ethical considerations associated with the development of information systems	explain legal, social and ethical considerations associated with the development of information systems
identifies impacts, including unintended negative consequences, of choices made about technology use	describes impacts, including unintended negative consequences, of choices made about technology use	explains impact, including unintended negative consequences, of choices made about technology use
describes how policies around the use and application of systems are necessary for the safe and effective use of systems.	describes how policies around the use and application of systems are necessary for the safe and effective use of systems.	explains how policies around the use and application of systems are necessary for the safe and effective use of systems.

Quality Assurance

- This will be determined by TASC at time of accreditation.

Qualifications and Award Requirements

The final award will be determined by the Office of Tasmanian Assessment, Standards and Certification from 6 ratings.

The minimum requirements for an award in *Digital Management and Leadership** Level 2 are as follows:

EXCEPTIONAL ACHIEVEMENT (EA)
5 'A' ratings, 1 'B' rating

HIGH ACHIEVEMENT (HA)
3 'A' ratings, 2 'B' ratings, 1 'C' rating

COMMENDABLE ACHIEVEMENT (CA)
3 'B' ratings, 3 'C' ratings

SATISFACTORY ACHIEVEMENT (SA)
5 'C' ratings

PRELIMINARY ACHIEVEMENT (PA)
3 'C' ratings

A learner who otherwise achieves the ratings for an SA (Satisfactory Achievement) award but who fails to show any evidence of achievement in one or more criteria ('z' notation) will be issued with a PA (Preliminary Achievement) award.

Course Evaluation

- This will be confirmed by time of accreditation.

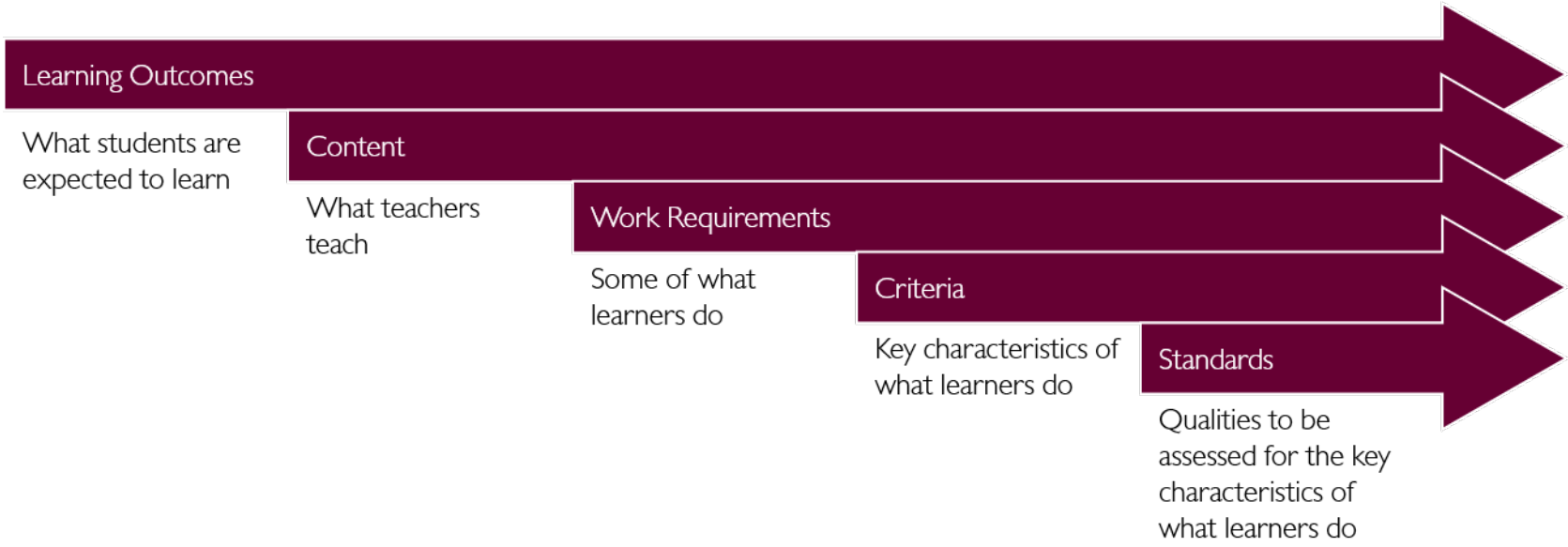
Course Developer

This course has been developed by the Department of Education's Years 9 to 12 Learning Unit in collaboration with Catholic Education Tasmania and Independent Schools Tasmania.

Accreditation and Version History

- Details to be determined by TASC at time of accreditation.

Appendix 1 - Line of Sight



Learning Outcomes	Course Content	Work Requirements	Criteria	Standards	General Capabilities (GC)
1. Apply and describe a systems development lifecycle to plan, analyse, design, develop and evaluate an information system to solve an identified problem.	Module 1, 2, 3	Module 1, 2, 3	C 1	All	GC:
2. Apply personal leadership and project management skills when working independently and collaboratively with others.	Module 1, 2, 3	Module 1, 2, 3	C 2	All	GC:
3. Describe and explain the components of an information system, and the inter-relationships between these components including security implications.	Module 1, 2, 3	Module 1, 2, 3	C 3	All	GC:
4. Describe the impact of existing, new and emerging technologies on people and information systems.	Module 1	Module 1	4	All	GC:

5. Explain the role digital technologies play in societal and organisational change .	Module 2	Module 2	C 5	All	GC: 
6. Describe how digital solutions are utilised and their impact on society.	Module 3	Module 3	C 6	All	GC: 

Appendix 2 - Alignment to Curriculum Frameworks

Progression from the F-10 Australian Curriculum: Science

This course component provides a progression from in the F-10 Australian Curriculum: Technologies curriculum - Digital Technologies.

Australian Core Skills for Work: Digital Literacy Skills Framework

This course component meets the Level 3 requirements of the core skills for digital literacy.

Appendix 3 - Work Requirements

Module 1 Work Requirements Specifications

Focus Area: Professional Studies
Title of Work Requirement: Digital Systems
Mode /Format: Extended response – Multimodal Presentation
Learning Outcomes: 2, 3, 4
Description: In small groups research, prepare and present a multimodal presentation containing several examples of digital systems (existing, new and emerging).

- Identify the components of each system
    - For example, a desktop computer, smartphone or augmented reality system.
- Discuss new or emerging digital systems
    - For example, Amazon delivery drone, Smart refrigerator, wearable technology products
- Identify aspects of existing digital systems that were innovative when they were released on the market

Size: recommended maximum of 9 minutes multimodal presentation
Timing: none specified
External agencies: none required
Relevant Criterion/criteria:

- Criterion 2: elements 2 and 4
- Criterion 3: elements 1, 3 and 4
- Criterion 4: all standard elements

Focus Area: Professional Studies
Title of Work Requirement: Systems Design Lifecycle
Mode /Format: Project
Learning Outcomes: 1, 2, 3, 4
Description: Learners experience the systems development lifecycle by responding to simple problems or identified needs.
Through this area of study, learners develop an understanding of effective teams and how they as individuals, contribute to team success. They also develop skills in project management within in specific constraints such as resource and time.
Students will document their experiences using a production diary or equivalent (e.g. a folio or blog) to capture their design process including ideation, storyboards and annotated photos.

Students will present an SDLC response detailing their development process journey and produce an individual reflection on teamwork and project management.
Teachers will scaffold initial systems development challenges and provide significant support in sections for learners as they develop their knowledge and skills of working through the development process.
Size: recommend maximum of 10hours on task
Timing: Learners will have the opportunity to undertake multiple mini projects throughout Module 1
External agencies: none required
Relevant Criterion/criteria:

- Criterion 1: all standard elements
- Criterion 2: all standard elements
- Criterion 3: all standard elements
- Criterion 4: elements 2 and 3

Module 2 Work Requirements Specifications

Focus Area: Professional Studies
Title of Work Requirement: User-driven design - solution/prototype pitch
Mode /Format: Product
Learning Outcomes: 1, 2, 3
Description: Learners will engage with a client/user to analyse a familiar problem and design and prototype a solution. Students will then pitch their solution to an audience including the identified user/client.
Learners will need to:

- define the problem to be solved
- investigate the problem including interviewing stakeholders
- record and analyse findings, identify problems and inefficiencies with current system and establish a working relationship with the owner of the problem
- identify possible solutions and present them in such a way as to be understandable to the end user
- specify the objectives for the project and the hardware and software requirements.

Note: The user may be identified for the class or learners may identify their own client/user (which may be a friend or family member)
Size: The size, complexity and scale of the digital solution will be appropriate to a guided figure of 50 hours for this module.
Timing: no specified timing
External agencies: identified community member or member of an organisation - client/user
Relevant Criterion/criteria:

- Criterion 1: all standard elements
- Criterion 2: all standard elements
- Criterion 3: all standard elements

Focus Area: Professional Studies
Title of Work Requirement: Digital Technologies and Change
Mode /Format: Extended response – research task
Learning Outcomes: 5

Description: Learners research a topic relevant to the role digital technologies play in societal and/or organisational change.
Topic examples

- Digital divide
- Global communications network
- Automation
- Machine learning
- Cloud-based storage
- Cryptocurrency
- Data mining
- Social networking services/platforms
- Technology enhanced learning
- IoT and sensor networks

Size: A recommended maximum of 1000 words
Timing: none specified
External agencies: none required
Relevant Criterion/criteria:

- Criterion 5: standard elements

Module 3 Work Requirements Specifications

Focus Area: Professional Studies
Title of Work Requirement: Case Study
Mode /Format: folio
Learning Outcomes: 1, 2, 3, 6
Description:
Design and production of a digital solution to a case as provided by the course instructor.
The process that learners have followed must be documented in a production diary. The production diary must be presented as a design folio, including:

- Problem identification and analysis
  - clear statement identifying the problem
  - in depth analysis of the problem including:
    - identification of stake holders
    - identification of existing solutions
- Project plan – including:
  - projected timeline
  - initial designs and thoughts on a new solution
  - prototype and appropriate documentation
  - analysis of chosen design
  - identification of flaws in design
  - suggested improvements given ideal circumstances.
- Iterative testing plans and implementation
  - documenting each step of each cycle of the Systems Development Lifecycle.
- Systems specifications documentation
- Project review and closure report

This is to be presented in an appropriate format including evidence of design development storyboarding and annotated photos of production process and documentation of testing processes. Learns should address the

Size: The size, complexity and scale of the digital solution will be appropriate to a guided figure of 50 hours for this module.

Timing: none specifies

External agencies: none required

Relevant Criterion/criteria:

- Criterion 1: all standard elements
- Criterion 2: all standard elements
- Criterion 3: all standard elements
- Criterion 6: all standard elements

Appendix 4 – General Capabilities and Cross-Curriculum Priorities

Learning across the curriculum content, including the cross-curriculum priorities and general capabilities, assists students to achieve the broad learning outcomes defined in the *Alice Springs (Mparntwe) Education Declaration* (December 2019).

General Capabilities:

The general capabilities play a significant role in the Australian Curriculum in equipping young Australians to live and work successfully in the twenty-first century.

In the Australian Curriculum, capability encompasses knowledge, skills, behaviours and dispositions. Students develop capability when they apply knowledge and skills confidently, effectively and appropriately in complex and changing circumstances, in their learning at school and in their lives outside school.

The general capabilities include:

- Critical and creative thinking
- Ethical understanding
- Information and communication technology capability
- Intercultural understanding
- Literacy
- Numeracy
- Personal and social capability

Cross-Curriculum Priorities:

Cross-curriculum priorities enable students to develop understanding about and address the contemporary issues they face, for their own benefit and for the benefit of Australia as a whole. The priorities provide national, regional and global dimensions which will enrich the curriculum through development of considered and focused content that fits naturally within learning areas. Incorporation of the priorities will encourage conversations between students, teachers and the wider community.

The cross-curriculum priorities include:

- Aboriginal and Torres Strait Islander Histories and Cultures 
- Asia and Australia's Engagement with Asia 
- Sustainability 

Appendix 5 – Glossary

- A central glossary will be added to the final draft of the course for consultation.