DEPARTMENT OF EDUCATION
learners first

Professional Studies

Technologies

Information Systems and Digital Technologies 3

COURSE DOCUMENT

DRAFT

PHASE 3 CONSULTATION

Catholic Education Tasmania

INDEPENDENT SCHOOLS TASMANIA

Years 9 to 12 Learning

Tasmanian Government

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Phase 3 Consultation Draft Published: March 2021

Information Systems and Digital Technologies*, 150 hours – Level 3

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

This course is the Level 3 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.

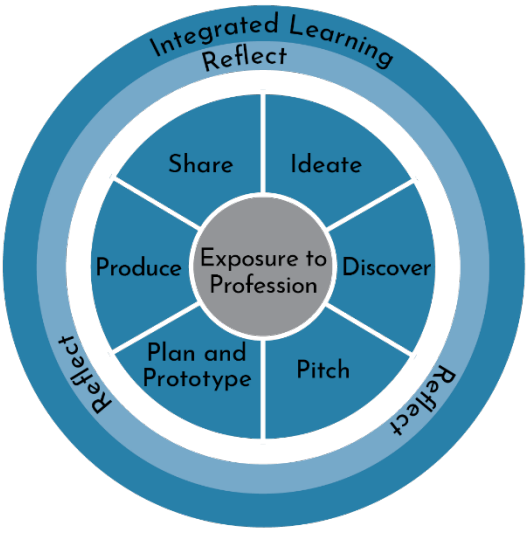
*Digital Management and Leadership** Level 3 is a Professional Studies course.

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 organisations manage, use and organise data to solve a range of information problems
- develop specialised knowledge and understanding of transferable tools and techniques that support problem solving and project management
- use a variety platforms and applications to solve problems, creatively manage and retrieve information and communicate effectively
- replicate a professional paradigm by working in collaborative teams, responding to client-driven briefs, conducting user-centred research and communicating using professional standards.

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 Management and Leadership** Level 3 is a course for learners who would like to broaden their knowledge and understanding of the role of digital transformation in organisational success and the skills leaders and managers require to embrace organisational change. Through authentic problem solving, practical application and work exposure, this course enables learners to develop the transferable capacities needed to develop both the technical and strategic tool kits essential for future digital managers and leaders in the IT sector and a wide range of organisations.

Learners will use a Systems Development Lifecycle to analyse a problem and design, develop and evaluate a solution in relation to client requirements.

Study of *Digital Management and Leadership** Level 3 promotes experimentation, agile ways of working and a growth mindset.

There are three main topics in the course corresponding to three modules of learning:

- Digital transformation
- Data-driven design
- Creative intelligence

Pathways

This course is designed for learners who are interested in studying project management and systems development.

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

Complementary courses in Years 11 and 12 include *Computer Science*, *Accounting*, *Business Studies*, *Economics*, *Legal Studies*, and appropriate courses from the learning areas of English, Mathematics and Science.

*Digital Management and Leadership** 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 essential that learners undertaking this course have the opportunity to work collaboratively (face-to-face and/or electronically).

Learners undertaking this course must be able to interact confidently with a contemporary personal computer system in a school/college environment.

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 that may include database software, local web servers, content management systems and developer tools.

In many cases the actual software will be identified by the learner as part of their learning.

In some cases, this may require:

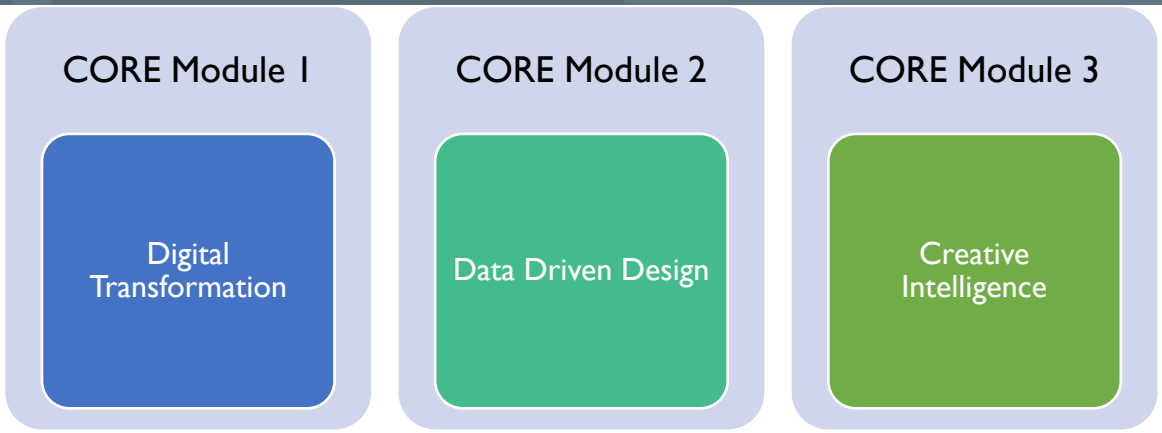
- learners to have the technical ability and permission to instal software onto a computer
- computers that are isolated from the main computing environment, to maintain network security.

Course Structure, Delivery and Progression

Structure

This course consists of three 50-hour modules.

Modules Available
Core Module 1: Digital transformation
Core Module 2: Data driven design
Core Module 3: Creative intelligence



Delivery

Modules 1 and 2 should be delivered before Module 3. There is no other prescribed order.

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 - Digital transformation

This module introduces the specialist knowledge and skills required to explore opportunities and novel solutions to challenges faced by organisations using agile teamwork and project management methodologies and techniques.

Module 1 Learning Outcomes

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

1. analyse and effectively apply a systems development process in response to an identified problem
2. analyse and apply personal leadership and project management skills when working independently and collaboratively with others
3. evaluate and engage confidently with components of information systems to achieve digital solutions
4. describe and analyse the role of creativity, innovation intrapreneurship and or enterprise in digital careers

Module 1 Content

Exposure to professional practice

- project management methodologies and techniques
- personal leadership skills within agile teams
- leadership and change management theories
- safe work practices and procedures relevant to the use of digital technologies
- explore the role of creativity, innovation and enterprise/intraprise in digital careers.

Ideation, research, discovery and integrated learning

- use a systems development process to produce a solution:
  - analysis - determining what is required to solve a problem. It involves identifying the solution requirements, constraints and scope.
  - design - determining how the solution requirements will function and appear. It involves developing evaluation criteria; designing the functionality, appearance and user interface of the solution; and designing the tests to ensure that requirements can be met.
  - development - involves transforming the requirements and designs into a working information system solution. It involves the manipulation and validation of data, testing to ensure the solution meets requirements and generating documentation to support the use of the solution.
  - evaluation - involves determining the degree to which the systems solution has met requirements. It involves evaluating the solution against the evaluation criteria to see how well it meets requirements and a strategy to evaluate the solution after implementation.

Note: when creating solutions, this methodology can be applied as a single stage-by-stage problem-solving process or can be applied to each iteration of an agile problem-solving process.

Production and sharing replicating a professional paradigm.

- project management skills
- reflective practices
- agile teamwork
- research based multimodal presentation.

Learners will investigate the key drivers of digital transformation and consider the pros and cons of the digital technologies driving advancement. They will use computational thinking to respond to a need or opportunity and analyse the components and characteristics of information systems, making judgements about the suitability of the components for the creation of novel solutions. Learners will use an agile teamwork approach to systems development and clearly articulate strategies to promote effective teamwork and prepare, document and monitor project plans.

Key knowledge

- the nature, function and interrelationship of data, hardware and software systems
- goals and objectives of organisations and information systems
- development of design specifications
- the role of digital innovation, enterprise and or intraprise in organisations
- agile project management methodologies and techniques
- leadership and group management within agile teams
- problem solving approaches
- reflection strategies.

Key skills

- select and use appropriate hardware and software tools when developing information systems solutions

- interpret solution requirements and designs to develop digital solutions
- generate alternative design ideas
- document design specifications
- develop evaluation criteria to select and justify preferred designs
- communicate with an audience and stakeholders
- reflection.

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 - industry excursion/incursion and one (1) product (journal + annotated prototype or proof of concept) 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 - Data driven design

This module focuses on using data to solve problems through the application of a Systems Development Lifecycle (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. analyse and effectively apply a systems development process in response to an identified problem
2. analyse and apply personal leadership and project management skills when working independently and collaboratively with others
3. evaluate and engage confidently with components of information systems to achieve digital solutions
5. analyse the role digital technologies play in societal and organisational change.

Module 2 Content

Exposure to professional practice

- data analytics
- analyse the role digital technologies play in societal and organisational change
- explore, test, and learn from failure
- collaborative teams.

Ideation, research, discovery and integrated learning

- investigate and analyse a need or opportunity and produce a specification
- data collection, analysis and storage
- SDLC
- developing physical and or software solutions.

Production and sharing replicating a professional paradigm

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

Learners will analyse the role of digital technologies and change. They will engage with at least two systems tasks, one of which will provide an opportunity to analyse and evaluate information systems development security strategies within an organisation and recommend a risk management plan to improve current practices. Learners will explore the role of failure in digital transformation journeys. Finally, they will reflect on their leadership and management skills and develop, monitor and assess individual and group goals and strategies for effective teamwork.

Key knowledge

- characteristics of development trends
- methods and techniques for data collection and analysis
- the use of digital technologies including advanced functions
- emerging trends in digital systems and the importance of innovation to organisations technologies driving digital transformation, such as artificial intelligence (AI), Internet of Things (IoT), Blockchain and Big Data analytics
- risk analysis methodologies
- project management methodologies and techniques
- techniques for documenting the development of solutions.

Key skills

- intra and interpersonal skills
- computational thinking, including abstraction
- data analysis
- iterative project-development techniques
- risk mitigation plans
- annotate designs when working on a digital product and/or digital solution.

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) project - systems task and one (1) investigation (role of failure).

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 - Creative intelligence

In Module 3 learners will apply theoretical knowledge and practically demonstrate critical and creative thinking as they respond innovatively to a complex problem based or real-world case study. The case study will emphasise a professional approach requiring learners to exhibit teamwork, communication skills, team and personal management and accounting for ethics, privacy and information security.

Module 3 Learning Outcomes

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

1. analyse and effectively apply a systems development process in response to an identified problem
2. analyse and apply personal leadership and project management skills when working independently and collaboratively with others
3. evaluate and engage confidently with components of information systems to achieve digital solutions
6. analyse the social, ethical, legal, cultural 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 case study
- produce a specification brief based on identified criteria
- project management
- collaborative teams.

Ideation, research, discovery and integrated learning

- investigate and analyse a problem
- ways of thinking including computational, systems, design, critical and creative thinking
- use SDLC to produce an optimal solution
- use project management and problem-solving methodologies and techniques.

Production and sharing replicating a professional paradigm

- document project management and problem-solving methodologies
- reflective journal
- produce a product or solution.

Learners will replicate a professional paradigm by establishing a team with clearly defined roles. The team will ideate and identify a problem, need, opportunity or situation that has an achievable innovative solution and create a design specification. Learners will pitch their concept to an audience before undertaking a systems design process to create and evaluate an optimised engineering design solution.

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
- ethical issues arising from data and information security practices
- the concept of intellectual property (IP)

- 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) extended learner project 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.

TASC will supervise the external assessment of designated criteria which will be indicated by an asterisk (*). The ratings obtained from the external assessments will be used in addition to internal ratings from the provider to determine the final award.

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 3 will be based on the degree to which the learner can:

1. analyse and apply an iterative process to manage a systems development cycle and justify choices*
2. analyse personal leadership and project management skills*
3. justify choices of hardware components and application software to provide effective digital solutions*
4. explain the role of creativity, innovation, intrapreneurship and or enterprise in organisations
5. explain the interrelationships between digital technologies and transformation
6. explain how digital solutions are utilised and their impact on society

*denotes criteria that are both internally and externally assessed.

Standards

Criterion 1: analyse and apply an iterative process to manage a systems development cycle and justify choices*

This criterion is both internally and externally assessed.

Rating C	Rating B	Rating A
analyses data and information to identify a limited range of needs and opportunities for the development of digital information systems	analyses data and information to identify and describe a range of needs and opportunities for the development of digital information systems	reliably analyses data and information to identify and analyse a wide-range of needs and opportunities for the development of digital information systems
creates design specifications in response to data providing some justification to support ideas and choices	creates detailed design specifications in response to data providing justification to support ideas and choices	creates comprehensive design specifications in response to data providing limited justification to support ideas and choices
applies a limited range of data manipulation and validation strategies to create a working solution and tests to ensure the solution meets some requirements	applies a range of data manipulation and validation strategies to create a working solution and tests to ensure the solution meets most requirements	strategically applies a range of data manipulation and validation strategies and tests to create and refine a working solution justifying how the solution meets requirements
evaluates the suitability and appropriateness of the solution or prototype using evaluation criteria and explains some design decisions.	analyses the suitability and appropriateness of the solution or prototype using evaluation criteria and justifies some design decisions.	critically analyses the suitability and appropriateness of the solution or prototype using evaluation criteria and comprehensively justifies design decisions.

Criterion 2: analyse personal leadership and project management skills*

This criterion is both internally and externally assessed.

Rating C	Rating B	Rating A
describes a limited range of leadership theories and illustrates typical application and situations	describes a range of leadership theories and explains their appropriate application in given situations	analyses a range of leadership theories and evaluates how these may be applied in a range of situations
reflects on personal leadership skills, roles and responsibilities when working independently and collaboratively as a digital leader	reflects and analyses personal leadership skills, roles and responsibilities when working independently and collaboratively as an effective digital leader	reflects and critically analyses personal leadership skills, roles and responsibilities when working independently and collaboratively as an effective digital leader
explains project management strategies, methodologies and procedures and describes their validity and reliability	analyses project management strategies, methodologies and procedures and explains their validity and reliability	critically analyses project management strategies, methodologies and procedures and evaluates their validity and reliability
selects and applies suitable communication techniques in the development, planning, production and presentation of ideas and projects.	selects, interprets and applies a range of suitable communication techniques in the development, planning, production and presentation of ideas and projects.	selects, analyses and applies a range of targeted communication techniques in the development, planning, production and presentation of ideas and projects .

Criterion 3: justify choices of hardware components, application software and network technology to provide effective digital solutions*

This criterion is both internally and externally assessed.

Rating C	Rating B	Rating A
selects and uses with limited explanation, appropriate digital components, application features and network technology to create feasible systems solutions	selects and effectively uses with some justification, appropriate digital components, a range of application features and network technology to create functional systems solutions	thoroughly justifies the selection of appropriate digital components including network technology and effectively uses a range of relevant and complex features to create sophisticated systems solutions
describes with some analysis, relationships in data sets to draw generally informed conclusions and make predictions, with some justification	analysis of relationships in data sets to draw informed conclusions and make justified predictions	analysis of relationships in data sets to draw insightful conclusions and make well-justified predictions
applies a limited range of technical skills and processes to develop generally efficient and logical solutions to problems	capably applies a range of technical skills and processes to develop efficient and mostly logical solutions to some complex problems	proficiently applies a broad range of skills and processes to develop highly efficient and logical solutions to complex problems
identification and discussion of a limited range of potential risks to software and data security, identifying ways to minimize risk.	identification and discussion of a range of potential risks to software and data security, providing some recommendations to plan risk management.	comprehensive identification and analysis of the potential risks to software and data security, providing recommendations to plan effective risk management.

Criterion 4: explain the role of creativity, innovation and intrapreneurship in organisations

This criterion is only internally assessed.

Rating C	Rating B	Rating A
describes and applies a limited range of agile principles of teamwork	explains and applies a range of agile principles of teamwork	analyses and applies a range of agile principles of teamwork
describes how enterprise can help drive the development of new solutions or product ideas	explains how enterprise can help drive the development of new solutions or product ideas	analyses how enterprise can help drive the development of new solutions or product ideas
describes a variety of occupations involving digital systems, including the roles and the responsibilities of people working within these occupations.	compares and analyses a variety of occupations involving digital systems, including roles and the responsibilities of people working within these occupations.	analyses roles and responsibilities of a range of occupations or careers (including those outside of core computing careers) and evaluates ways in which digital systems could contribute to them now and in the future.

Criterion 5: explain the interrelationships between digital technologies and transformation

This criterion is only internally assessed.

Rating C	Rating B	Rating A
examines the scope of digital transformation and describes current technologies and innovations	investigates the scope of digital transformation and analyses current and emerging technologies and innovations	investigates the scope of digital transformation and critically analyses current and emerging technologies and innovations
explains with some analysis the role of failure in the digital transformation journeys of local or global organisations	analyses the role of failure in the digital transformation journeys of local or global organisations	critically analyses the role of failure in the digital transformation journeys of local or global organisations
explains with some analysis the impact, including unintended negative consequences, of choices made about technology use.	analyses the impact, including unintended negative consequences, of choices made about technology use.	critically analyses the impact, including unintended negative consequences, of choices made about technology use.

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

This criterion is only internally assessed.

Rating C	Rating B	Rating A
explains with some analysis legal, social, ethical, cultural and/or sustainability considerations associated with the development of information systems and generally applies a professional code of conduct to their own practice	analyses legal, social, ethical, cultural and/or sustainability considerations associated with the development of information systems and frequently applies a professional code of conduct to their own practice	critically analyses legal, social, ethical, cultural and/or sustainability considerations associated with the development of information systems and consistently applies a professional code of conduct to their own practice
identifies and generally applies practices that meet legal and ethical obligations and creative commons, copyright and trademark protocols and respects intellectual property	identifies and frequently applies appropriate practices that meet legal and ethical obligations and creative commons, copyright and trademark protocols and respects intellectual property	identifies and consistently applies appropriately practices that meet legal and ethical obligations and creative commons, copyright and trademark protocols and respects intellectual property
identify and discuss the need for digital literacy skills including digital citizenship to engage in society (learning, life and work).	analyse and discuss the need for digital literacy skills including digital citizenship to engage in society.	critically analyse and discuss the need for digital literacy skills including digital citizenship to engage in society.

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 the 9 ratings (6 ratings from the internal assessment and 3 ratings from the external assessment).

The minimum requirements for an award in *Digital Management and Leadership** Level 3 are as follows:

EXCEPTIONAL ACHIEVEMENT (EA)
8'A' ratings, 1 'B' rating (2 'A' ratings, 1 'B' rating from external assessment)

HIGH ACHIEVEMENT (HA)
4 'A' ratings, 4 'B' ratings, 1 'C' ratings (1 'A' rating, 1 'B' rating and 1 'C' rating from external assessment)

COMMENDABLE ACHIEVEMENT (CA)
4 'B' ratings, 4 'C' ratings (1 'B' ratings, 2 'C' ratings from external assessment)

SATISFACTORY ACHIEVEMENT (SA)
7 'C' ratings (2 'C' ratings from external assessment)

PRELIMINARY ACHIEVEMENT (PA)
5 'C' ratings

A learner who otherwise achieves the ratings for a CA (Commendable Achievement) or 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.

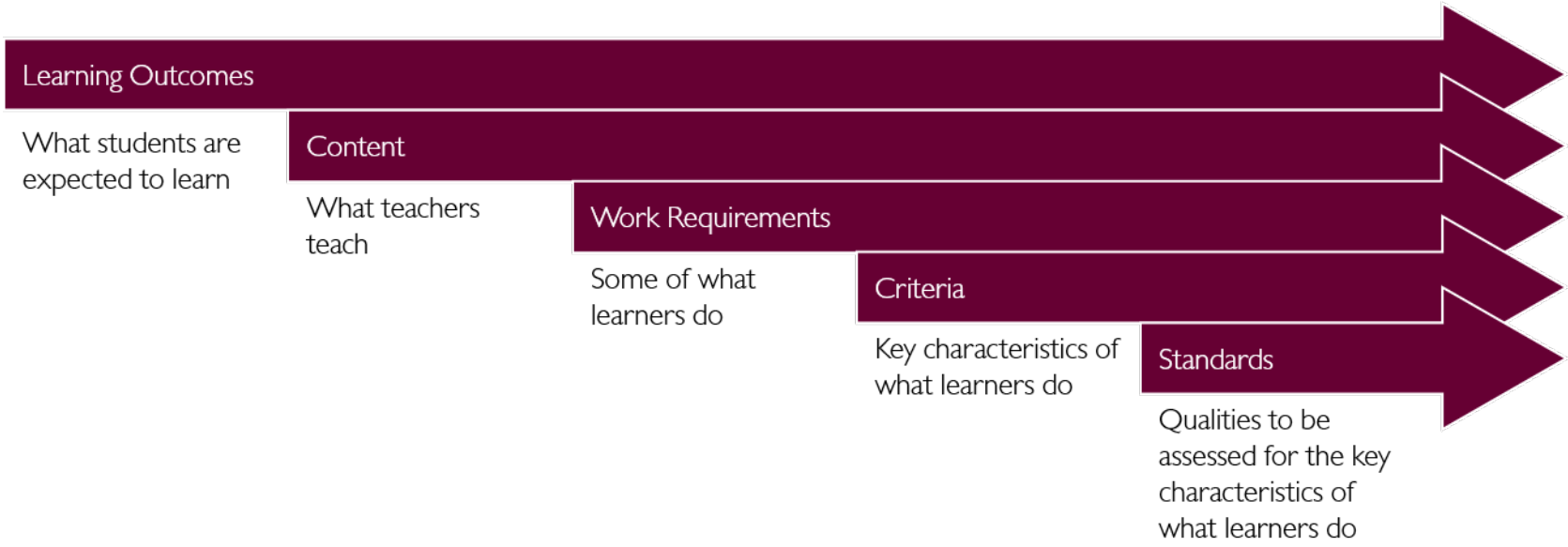
Course Developer

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. Analyse and effectively apply a systems development process in response to an identified problem.	Module 1, 2, 3	Module 1, 2, 3	C 1	All	GC:
2. Analyse and 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. Evaluate and engage confidently with components of information systems to achieve digital solutions.	Module 1, 2, 3	Module 1, 2, 3	C 3	All	GC:

4.	Describe and analyse the role of creativity, innovation intrapreneurship and or enterprise in digital careers.	Module 1	Module 1	C 4	All	GC: 
5.	Analyse the role digital technologies play in societal and organisational change.	Module 2	Module 2	C 5	All	GC: 
6.	Analyse the social, ethical, legal, cultural and/or sustainability issues related to digital technologies and their effects on the individual, society and the environment.	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 4 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: Research Investigation
Mode /Format: Extended response
Learning Outcomes: 2, 3, 4
Description: Learners will discuss:

- the role of information staff in contemporary organisation
- the role of intraprenuership within an organisation
- the pros and cons of the digital technologies driving advancement and
- the impact of digital transformation within a nominated industry/organisation

Opportunities for excursions/incursion are encouraged to connect learners with real-life contexts.
Size: Recommended maximum:1500 words
Timing: none specified
External agencies: opportunities for industry excursion/incursion
Relevant Criterion/criteria:

- Criterion 2: element 4
- Criterion 3: element 1
- Criterion 4: elements 2 and 3

Relationship to External Assessment: internal

Focus Area: Professional studies
Title of Work Requirement: reflective journal + annotated prototype or proof of concept
Mode /Format: Product (rapid prototyping)
Learning Outcomes: 1, 2, 3, 4
Description:
In agile teams, learners will:

- respond to a provided scenario based on challenges faced by organisations
- they will explore opportunities to produce novel solutions and
- produce an innovative solution - annotated prototype or proof of concept

Learners will produce a reflective journal documenting:

- the nature and function of agile teams
- agile management processes
- the role of enterprise in SDLC – producing innovative/novel solutions
- the role they took within the team
- their personal leadership strengths and challenges in relation to leadership theories

Size: recommended maximum of 2500 words

Timing: none specified
External agencies: opportunities for industry excursion/incursion
Relevant Criterion/criteria:

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

Relationship to External Assessment: internal

Module 2 Work Requirements Specifications

Focus Area: Professional studies
Title of Work Requirement: Data-driven design – solution and pitch
Mode /Format: folio
Learning Outcomes: 1, 2, 3, 5
Description:
In collaborative teams (where possible): Learners will use the SDLC to project manage and develop a working solution. Learners will maintain a production journal detailing each phase of the SDLC and project management process.
The systems task should be of interest to the learner and enable learners to analyse data and assess security risks.
Learners will take a data-driven approach to analyse a problem and design and prototype a solution. Students will then pitch their solution to an audience including possible stakeholders.
Learners will need to:

- define the problem to be solved
- investigate the problem identify functional and non-functional requirements, this should include the collection of primary data via a variety of methods including observation, surveys and interviews with peers, focus groups or experts and the analysis of secondary data
- identify and analysis constraints including time, equipment, security (cloud and network infrastructure), data privacy and usability
- identify possible solutions and present them in such a way as to be understandable to stakeholders
- specify the objectives for the project (evaluation criteria) and the digital systems requirements
- monitor, modify and annotate project plans throughout development and evaluation process
- develop a working information system
- create a formal test plan to guide the testing and record test outcomes
- evaluate the efficiency and effectiveness of the solution against their identified evaluation criteria.

Learners will collect evidence for their folio throughout the project While not an exhaustive list, this evidence may take the form of progress journals, annotations to the project plan, screenshots of infographics or dynamic data visualisations, photographs of design iterations and annotated drafts of diagrams.
Learners will clearly identify their role in the project (if working in a team) and reflect on their personal management and leadership.
Size: The size, complexity and scale of the engineering solution will be appropriate to a guided figure of 50 hours for this module - noting students may undertake multiple systems design challenges within this module.
Timing: not specified

External agencies: access to peers, focus groups or experts
Relevant Criterion/criteria:

- Criterion 1: all standard elements
- Criterion 2: all standard elements
- Criterion 3: all standard elements
- Criterion 5: element 3

Relationship to External Assessment: internal

Focus Area: Professional studies
Title of Work Requirement: Research Investigation
Mode /Format: Investigation
Learning Outcomes: 2, 3, 5
Description: Learners will analyse a historical or contemporary information system failure, the role of procedures and/or people in that failure
Size: Recommended maximum 1500 words or 9min multimodal presentation or equivalent combination of both
Timing: non specified
External agencies: none required
Relevant Criterion/criteria:

- Criterion 2: element 4
- Criterion 3: element 1
- Criterion 5: all standard elements

Relationship to External Assessment: internal

Module 3 Work Requirements Specifications

Focus Area: Professional studies
Title of Work Requirement: Learner project folio
Mode /Format: Extended project
Learning Outcomes: 1, 2, 3, 6
Description: Proposal/Feasibility Study (internal)

- Identified research problem (The problem should be manageable and have sufficient complexity to enable the student to achieve at the highest level.)
- Background research to inform problem analysis
- Work plan (timeline/risk mitigation/role allocation)
- Pitch/Presentation

Project (external)

- Introduction
- Project Statement
- Specifications, constraints and limitations
- SDLC Process
  - Analysis of problem including consultation of stakeholders
  - Investigation of possible solutions
  - Criteria for selection of student's solution
  - Prototyping and developing an effective solution
  - Testing and evaluation.

Reflective Journal (internal)-– demonstrating how the learner:

- monitored the effectiveness of the plans for their inquiry using appropriate strategies (e.g. developing criteria to measure effective implementation, checking progress according to a timeline, providing progress reports on action taken and decisions made during the process)
- addressed problems encountered
- analysed how perspectives were shaped by the sources of information they used
- effectiveness of the collaborative strategies they used in planning and implementing their inquiry
- evaluated the effectiveness of the inquiry including their research sources, methods, findings and plans and by revising their plans as problems arose.
  - The reflective journal serves an important function. The journal assists with ongoing support and supervision and is a formal record enabling authentication of the learner's work. The journal documents the result of collaborative work, reflecting the importance of teamwork to successful information systems projects.
  - The journal should be maintained in electronic form. All items in the journal must be dated and legible.

Size:

Internal

- proposal 750 – 1000 words or multimodal equivalent
- reflective journal – 1000 – 1500 words or multimodal equivalent

External

- Folio - Maximum of 40 A4 equivalent pages (includes research, evidence of planning, concept sketches with annotations, photographs, charts/diagrams, etc) no larger than 100 megabytes in total size.

Timing: 50hrs of dedicated class time

External agencies: access to peers, focus groups, community stakeholders or experts

Relevant Criterion/criteria:

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

Relationship to External Assessment: internally and externally assessed

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.