Information Systems and Digital Technologies

LEVEL 3	15 TCE CREDIT POINTS
COURSE CODE	ITS315118
COURSE SPAN	2018 — 2023
READING AND WRITING STANDARD	NO
MATHEMATICS STANDARD	NO
COMPUTERS AND INTERNET STANDARD	YES

This course was delivered in 2021. Use A-Z Courses to find the current version (if available).

The purpose of Information Systems and Digital Technologies is to allow learners to develop an understanding of how organisations manage, use and organise data to solve a range of information problems

By undertaking this course learners will develop knowledge and understanding of transferable tools and techniques that support problem solving and project management. Successful completion of this course enables learners to have a deeper understanding of the processes and structures revolving around information systems and their relevance and importance in today's society.

Course Description

This course empowers the learner in the competent use and understanding of information systems and digital technologies, through practical experiences. Real world scenarios provide the platform to explore current and emerging digital technologies, including hardware and software applications.

At the core of the course is the appreciation of the development of information systems at several levels. These range from the global view of an information system – where the intent, extent and implications are explored – through to the implementation level where precision and accuracy of detail is encouraged.

Through the course learners will describe and analyse information systems, and learn the nature and application of a formal Project Management approach. They will make use of the Systems Development Life Cycle to develop a product. They will examine the legal, social and ethical issues that arise within a range of information systems and use a range of common tools associated with Information Systems. These skills, knowledge and understanding are then applied to an Applied Information System Case Study (Major Project) in which learners will design and develop an information system to meet an identified need.

Rationale

The purpose of Information Systems and Digital Technologies is to allow learners to develop an understanding of how organisations manage, use and organise data to solve a range of information problems.

Our society is increasingly reliant on information technology and systems. This course equips learners with a range of skills relating to information technology and information systems that will help prepare them for further education and study in a wide range of disciplines.

By undertaking this course, learners will develop knowledge and understanding of transferable tools and techniques that support problem solving and project management.

With society and workplaces changing at an increasing rate, learners need to learn to utilise a variety of platforms and applications to solve problems, creatively manage and retrieve information and communicate effectively. The strong problem-solving focus of this course provides an opportunity to develop and apply these skills.

Successful completion of this course enables learners to have a deeper understanding of the processes and structures revolving around information systems and their relevance and importance in today's society.

Learning Outcomes

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

1. identify, analyse and solve real world information problems
2. describe, explain and analyse the components of an information system, and the inter-relationships between these components
3. describe, explain and analyse social issues associated with information systems
4. design and develop an information system
5. use and evaluate an information system
6. work independently and collaboratively on information systems projects
7. plan, organise, and complete activities, using a project management approach
8. communicate ideas and information in a variety of forms

Access

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.

Pathways

Strong performance in English and/or Digital Technologies or other computing subjects in Year 10 or 11 is a useful background for this course.

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.

Information Systems and Digital Technologies 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.

Resource Requirements

Learners will require access to a range of software, and in some cases will need the technical ability and permissions to install software onto a computer system. In many cases the actual software will be identified by the learner as part of their learning. This could include software such as database software, local web servers, content management systems and developer tools. In some cases this may require computers that are isolated from the main computing environment, in order to maintain network security.

Course Size And Complexity

This course has a complexity level of 3.

At Level 3, the learner is expected to acquire a combination of theoretical and/or technical and factual knowledge and skills and use judgment when varying procedures to deal with unusual or unexpected aspects that may arise. Some skills in organising self and others are expected. Level 3 is a standard suitable to prepare learners for further study at tertiary level. VET competencies at this level are often those characteristic of an AQF Certificate III.

This course has a size value of 15.

Course Delivery

It is intended that the course sections are delivered in an integrated way, not as isolated topics, and with a balance between theoretical and practical aspects. Authentic case studies are recommended, in conjunction with a problem-solving or project-based approach. A suggested approach is that the Applied Information System Case Study (Major Project) be developed progressively as the relevant theory sections are completed.

Course Requirements

This course has six sections, all of which are compulsory.

One of these is an Applied Information System Case Study (Major Project)in which learners are expected to work largely under their own direction on the design and development of an information system, following a formal project management approach. This Applied Information System Case Study (Major Project) represents approximately 30 hours of course time.

The six sections are:

1. Describing Information Systems
2. Project Management (including the Project Lifecycle)
3. Systems Development Lifecycle
4. Social, Ethical and Legal Issues of Information Systems
5. Design Develop and use the Tools of an Information System
6. Applied Information System Case Study (Major Project).

The order in which the sections are approached is not prescribed, but the Applied Information System Case Study (Major Project) relies on the skills, knowledge and understanding from the other sections.

Course Content

This course is designed to provide a theoretical and practical understanding of how information is processed and managed in a complex data driven world. Learners develop a broad understanding of project management and related product development tools as well as knowledge of the wider information systems context: social, economic and legal.

Section 1: Describing Information Systems
Information systems consist of components that interact to transform data into information. There are four key components:

- data
- equipment (software and hardware)
- people
- procedures.

Learning about specialised digital systems and how the components interact within the system and their environment includes developing an understanding and knowledge about:

- data – as the underlying component of all information systems. Issues such as data quality and cleansing, data integrity, security, data standards and ways of visualising data will be included
- equipment – this includes any of the digital technologies such as hardware, infrastructure or the variety of software/applications that may be used in the development or implementation of an information system
- people – there are a range of people identified as stakeholders who may be involved in an information system. Stakeholders may include: end-users; developers; managers; customers; and clients.
- procedures – include those utilised by computer equipment and/or by people working with or using the information system.

Section 2: Project Management
Project Management has applications in many careers beyond ICT, so the skills and knowledge acquired will prove useful to learners in a wide range of contexts.

The effective use of project management techniques and tools enable learners to follow a Project Lifecycle (PLC) which includes the four phases:

- Project Initiation – this phase includes a business case or project proposal, in which the reasons for undertaking the project are presented. The feasibility of the project is examined, and benefits, costs, risks, key stakeholders and issues are identified.
- Planning (or Setting Up) – this phase identifies the project manager and team, sets up planning and documentation activities and organises the resources required to produce the outputs of the project.
- Execution (or Managing) – this phase is where the project team actually produces the project outputs. It includes ongoing management of the stakeholders, risks, quality, resources and issues, and control of the actual work.
- Closure (or Finalisation) – this phase is where the completed project outputs are handed over to the client. This includes technical manual and end user documentation. Closure also includes showing that costs have been paid, resources re-allocated and the project team disbanded. A closure report which includes a review of the process formally closes the project.

The PLC focuses on all the activities of a project, not the just the specifics of the information system product(s). In this section of the course learners will develop an understanding of the PLC and corresponding relevant project management terms and concepts such as:

- scope
- stakeholder understanding
- project feasibilities
- issue management
- project risks/limitations
- project resourcing.

Learners will also be exposed to organisational tools such as: Gantt Charts; Critical Path Analysis Diagrams; Pert Charts; and Work Breakdown Structures.

The Tasmanian Government Project Management Framework http://www.egovernment.tas.gov.au/project_management is used as the reference model for project management, though learners need to be aware that this is one of many variants. The Framework provides numerous documents and resources under a Creative Commons Attribution 4.0 International (CC BY 4.0) licence.

There is no requirement that learners use a specific Project Management software tool, but tracking of projects should make use of tools identified by the learner.

Section 3: Systems Development Lifecycle (SDLC)
The System Development Lifecycle (SDLC) focuses on realising the product(s) requirement and not the overall activities of the project.

The development of the product(s) in an information system requires an analysis of both the current situation and future needs. Design and development of a suitable and agreed system is followed by testing, documenting and evaluation of the solution. During this process appropriate modification and refinement is made.

The four stages of the SDLC used in this course are:

- 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.

Section 4: Social, Ethical and Legal Issues of Information Systems
In this section of the course, learners develop an understanding of the social, ethical and legal implications relating to information systems, particularly in the Australian context. Knowledge gained will aid learners to critically analyse case study scenarios and develop an understanding of boundaries when planning and creating information systems.

Learners study a range of topics both past and current to help further develop their understanding.

Core topics within this section are:

<u>Social issues</u>

- Benefits and costs of information systems including the changes they may bring, for example the effect of social media and the sharing economy. This would include study of, for example, the Digital Divide, national infrastructure projects such as National Broadband Network, impacts of technology on the nature of work, social impacts of disruptive technologies, censorship and metadata collection.
- Occupational health and safety, e.g. working environment, risks, design issues.
- Sustainability, e.g. environment, *e*-waste, global equity (National Television and Computer Recycling Scheme).

<u>Legal issues</u>

- Intellectual property, e.g. copyright, trademarks, patents, trade secrets, data sovereignty.
- Privacy – *Australian Privacy Principles*, *Australian Privacy Guidelines*, *Privacy Act 1988*, *Telecommunications* (*Interception and Access*) *Amendment* (*Data Retention*) *Act 2015*, *Personal Information Protection Act 2004* (*Tas*).
- Computer crime, including hacking, identity theft, phishing, denial of service attacks, cyberwarfare, use of social platforms by radical groups, phishing, prevention strategies (*Cybercrime Act 2001*, *Cybercrime Legislation Amendment Act 2012*).
- Laws and best practice codes, e.g. web censorship, government policies (*Spam Act 2003*).

<u>Ethical issues</u>

- Roles and expectations on IT professional staff, and business/client relationships.
- Data collection, storage, handling, communication, retention/deletion and misuse.
- Codes of ethics, such as: Australian Computer Society Code of Ethics; Association for Computing Machinery Code of Ethics and Professional Conduct; and British Computer Society Code of Conduct.
- Ethical dilemmas arising in the information systems field.
- Digital citizenship, e.g. netiquette, digital literacy, cybersafety.

Section 5: Design, Develop and Use the Tools of an Information System
In this practical section of the course, learners have the opportunity to undertake a range of applied tasks, from guided tutorials through to short challenge-based activities.

Applied tasks provide opportunities for learners to design, create, test and evaluate product(s) in preparation for the Applied Information System Case Study.
The range of tasks offered expose learners to software tools such as: databases, spreadsheets, mobile app creation tools and web site development environments which aid in the development of an information system.

The applied tasks provide opportunities to apply creativity, formal planning, project management and sound design principles to the product(s) being developed.

Section 6: Applied Information System Case Study (Major Project)
This section of the course is intended to provide learners with an opportunity to work on an information system project using sound project management techniques based on a formal methodology. Working collaboratively in small groups, learners will design and develop an information system to meet an identified need.

Examples of topics for this Major Project include:

- public transport booking system
- medical history management system
- hospital/care facility meal and nutrition management system
- medical or veterinary appointment management system
- co-working space booking and billing system
- creative arts event booking and ticketing system
- real estate client management system
- building maintenance system
- sports tournament management system
- casual staff rostering system
- online computer store ordering system
- automotive repair management system
- artworks curation system
- recruitment agency system
- club member management system
- mountain bike event and scoring system
- spare parts and service system
- loan vehicle booking system
- child care centre booking and billing system
- customer relationship management system
- community engagement system

The product will be internally assessed. This assessment will include criteria 4, 6, and 7.

Work Requirements

Work requirements for each section of the course are given below.

Section 1: Describing Information Systems
Data

- Interview: design and document a structured interview process for use with an organisation or individual using an information system. (20 interview questions)

- Presentation: after conducting the interview, produce and deliver a 10-minute presentation (supported by appropriate presentation software) that highlights the role of the four components of information systems in the context of the organisation or individual.

Equipment (software and hardware)

- Research Investigation: design and specify (with justification) a workplace computer system for a specified client scenario. (1500 words)

- Research report: a topic relevant to software and hardware issues in contemporary information systems. (1000 words)
  Example topics include, but are not limited to:

  – operating systems for workstations, portable and mobile devices
  – Open Source vs commercial software
  – integrated software suites vs dedicated software
  – Software as a Service (SaaS) vs installed software applications
  – Cloud Services vs locally hosted storage and application servers
  – accessibility of information systems (including usability for general users and for those with vision or colour perception limitations, responsive design for different devices and legal/policy issues).

People Procedures
The equivalent of *EITHER*:

- Case Study: role of information systems staff within a nominated organisation based on an industry excursion/incursion. (1000 words)

OR

- Research Investigation: analysis of a historical or contemporary information system failure, and the role of procedures in that failure. (1000 words)
  Historical examples include: Australian Census website failure; Heathrow airport shutdown; release of usernames and passwords on various platforms; and security breaches.

Section 2: Project Management
Learners will be provided with a scenario which describes a real-world project.

- PM software Task: use a software tool designed for an aspect of project management to represent the relevant PM aspect of this scenario. Example tasks include, but are not limited to:

  – produce a mindmap of project issues for the scenario
  – produce a Gantt chart that shows possible milestones and resource allocation for the scenario
  – produce and use a KanBan board for the scenario
  – produce a Work Breakdown structure for the scenario.

- Summary Sheet: summary of the four components of the PLC in relation to the scenario. (1000 words)

Section 3: Systems Development Lifecycle (SDLC)
SDLC Summary Sheet: learners produce a two-page document that summarises tasks that are typically encountered in the four components of the Systems Development Lifecycle. (1000 words)

Section 4: Social, Ethical and Legal Issues of Information Systems
Learners will identify a current or historical topic involving an information system.

They will then analyse the social, ethical and legal issues associated with that topic. (1000 words)

As examples, the topic could include (but is not limited to):

- the information systems supporting or arising from a new or emerging technology, for example:
    - drones and remotely piloted aircraft
    - digital currencies
    - cloud-based data storage and processing
    - the sharing economy
    - artificial intelligence
    - algorithm-based trading and advertising
    - wearable and embedded devices
    - Internet of Things and sensor networks
    - driverless passenger vehicles
    - Big Data and data mining
    - mass collection of personal information for medical and similar purposes
    - human rights issues related to access to technologies
- unplanned consequences of the information systems underpinning social media, search technologies or other online services, such as filter bubbles, memes, online addiction and the Digital Divide
- intentional misuse of the information systems underpinning social media, search technologies or other online services, such as bullying, insurgency and extremism, and "fake news".

Section 5: Design, Develop and Use the Tools of an Information System
Design Development
Any two of:

- System Task: develop a small information system using spreadsheet software and a new or existing dataset, making use of the functionality of the tool to produce an effective and usable tool for an end user. This could include the use of macros or the programming capability of the spreadsheet.

- System Task: develop a small information system using database software and a new or existing dataset, making use of the functionality of the tool to produce an effective and usable tool for an end user. This could include the use of programmability within the software.

- System Task: develop a small information system that uses a relational database. This should include at least one query, form, report and a custom user interface.

- System Task: use a templated web tool, content management system or other appropriate technology to develop a website for a given real-world scenario.

Evaluation

- Test Plan: create a formal Test Plan for a proposed system, in a form that can be used to guide the testing and record test outcomes.

Section 6: Applied Information System Case Study (Major Project)
Learners are required to undertake a Major Project which will require a high level of self-regulation and exploration of new aspects of information systems. The ability to explore, test, and learn from failure is important in this activity.

The Major Project will occupy approximately 30 hours of course time, and is underpinned by the relevant theory components. It is undertaken in small groups with learners undertaking roles within a project team.

The Project will be a balance between a) the project management and problem solving methodologies applied and documented, and b) the development of an information system using the SDLC to meet a client need.

Learners will maintain individual Project Journals that documents the date, description of activity, nature of activity, problems identified and subsequent task, for all work undertaken on the project.

In addition project management documentation is to be produced as each stage of the project is undertaken, as below, and maintained by the project team. This documentation should be based on the template documents provided through the Tasmanian Government Project Management Framework or equivalent. As the Major Project is limited by the available time, these templates need not be used in their full form.

Responsibility for creation and management of each section of the documentation is to be allocated within the project team.

The sections of documentation should include:
Initiate

- Major Project Proposal
- Feasibility Study

Setup or Planning

- Governance/Project Team – Terms of Reference
- Risk Management Plan/Risk Register
- Gantt Chart(s) showing project work plan
- Critical Path Analysis Diagrams
- PERT Chart(s)
- Communications Plan
- Testing Plan

Execution or Manage

- Stakeholder Engagement Plan
- Project Execution Plan
- Status Report

Finalise or Closure

- Project Review and Closure Report
- System Operation Manual

Learners may have additional or alternative documentation forms that fulfil the same function as some of the above.

The contribution of each learner to the project team must be clearly identified.

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.

Providers offering this course must participate in quality assurance processes specified by TASC to ensure provider validity and comparability of standards across all awards. For further information, see quality assurance and assessment processes.

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.

Quality Assurance Process

The following processes will be facilitated by TASC to ensure there is:

- a match between the standards of achievement specified in the course and the skills and knowledge demonstrated by learners
- community confidence in the integrity and meaning of the qualification.

TASC gives course providers feedback about any systematic differences in the relationship of their internal and external assessments and, where appropriate, seeks further evidence through audit and requires corrective action in the future.

External Assessment Requirements

The external assessment for this course will comprise a three-hour examination assessing Criteria 1, 2, 3, 5, and 8.

For further information, see the current external assessment specifications and guidelines.

Criteria

The assessment for Information Systems and Digital Technologies Level 3 will be based on the degree to which the learner can:

1. identify, analyse and solve real-world information problems*
2. describe, explain and analyse the components of an information system, and the inter-relationships between these components*
3. describe, explain and analyse social, legal and ethical issues associated with information systems*
4. design and develop an information system
5. use and evaluate an information system*
6. work independently and collaboratively
7. plan, organise and complete activities using a project management approach
8. communicate ideas and information in a variety of forms*

Note: * denotes criteria that are internally and externally assessed

Standards

Criterion 1: identify, analyse and solve real-world information problems

This criterion is both internally and externally assessed.

The learner:

Rating A	Rating B	Rating C
identifies, describes and correctly applies the four phases of Project Life Cycle (PLC)) to specific projects and justifies the inclusion of the tasks and processes in each phase	identifies, describes and correctly applies the four phases of Project Life Cycle (PLC) to specific projects	identifies and describes in writing the four phases of the Project Life Cycle (PLC)
identifies, describes in writing and correctly applies the four stages of the Systems Development Life Cycle (SDLC) to specific systems and justifies the inclusion of the tasks and processes in each stage	identifies, describes in writing and correctly applies the four stages of the Systems Development Life Cycle (SDLC) to specific systems	identifies and describes in writing the four stages of the Systems Development Life Cycle (SDLC)
correctly uses specialised project management terminology when discussing and writing about project management issues	correctly uses project management terminology when discussing and writing about project management issues	correctly uses basic project management terminology when discussing and writing about project management issues
effectively manages a project by using a range of tools and techniques to organise tasks and resources, oversee development and safeguard the completion and delivery of an information system	capably manages a project by using several project management tools and techniques to organise time and resources when developing and delivering information systems	competently uses several project management tools to organise time and resources when developing information systems

Criterion 2: describe, explain and analyse the components of an information system, and the inter-relationships between these components

This criterion is both internally and externally assessed.

The learner:

Rating A	Rating B	Rating C
identifies and accurately describes in writing, with critical analysis, the attributes of the four components of an information system (data, people, procedures, equipment) with reference to specific, complex, contemporary information systems*	identifies and accurately describes in writing, with some analysis, the attributes of the four components of an information system (data, people, procedures, equipment) with reference to specific information systems*	identifies and accurately describes in writing the four components of an information system (data, people, procedures, equipment) with reference to simple, specific information systems*
analyses and accurately describes in writing (using the correct terminology) the specialised capabilities and characteristics of the four components of an information system and their inter-relationships	analyses and accurately describes in writing (using the correct terminology) the capabilities and characteristics of the four components of an information system and their inter-relationships	accurately describes in writing (using the correct terminology) the basic capabilities and characteristics of the four components of an information system and their inter-relationships
makes appropriate selections from valid alternatives for each information system component and justifies and evaluates in writing the choice(s) in a variety of situations and contemporary contexts	makes appropriate selections from valid alternatives for each information system component and justifies in writing the choice(s) in a variety of situations	makes appropriate selections for each information system component and justifies in writing the choice(s) in given situations

* Simple systems (at the 'C' rating) would have characteristics like those of a registration/events database. A system at the 'B' rating would have characteristics like those of an on-line booking system. A complex, contemporary system (at the 'A' rating) would have characteristics like those of a self-service supermarket checkout system.

Criterion 3: describe, explain and analyse social, legal and ethical issues associated with information systems

This criterion is both internally and externally assessed.

The learner:

Rating A	Rating B	Rating C
identifies, accurately describes and evaluates in writing a range of relevant social and ethical issues associated with contemporary information systems, e.g. a proposal for a government metadata retention regime	identifies, accurately describes and analyses in writing a range of relevant social and ethical issues associated with information systems, e.g. social media policies	identifies and accurately discusses in writing some social and ethical issues associated with basic information systems, e.g. hacking
analyses and critically evaluates in writing a range of relevant legal issues associated with contemporary information systems	identifies, accurately discusses and analyses in writing and discusses a range of relevant legal issues associated with contemporary information systems	identifies and discusses in writing an overview of legal issues associated with basic information systems
uses and justifies a wide variety of techniques to address social, ethical and legal issues, producing comprehensive, well-researched and audience-focussed resources*	addresses a range of social, ethical and legal issues to create well-researched, audience-focussed resources*	addresses a limited number of social, ethical and legal issues to create resources in basic formats such as information sheets or flyers*
describes and discusses – with reference to a range of social, ethical and legal issues – the connections and inter-relationships between the issues from the perspective of a full range of stakeholders**	describes – with reference to a range of social, ethical and legal issues – the connections and inter-relationships between the issues from the perspective of significant stakeholders**	describes – with reference to a limited range of social, ethical and legal issues – the connections and inter-relationships between the issues from the perspective of some stakeholders**

* *Illustrative example* (*only*): At a 'C' rating the learner creates a legal/ethical help sheet for an information system; at a 'B' rating the learner creates an ethical/legal user guides for information systems; and at an 'A' rating the learner creates an ethical/legal online resource for training in the use of information systems.

** *Illustrative example* (*only*): At a 'C' rating the learner discusses a musician's view on downloading music; at a 'B' rating the learner analyses opposing views on censorship on the internet; and at an 'A' rating the learner critically analyses government policies/laws on database privacy.

Criterion 4: design and develop an information system

The learner:

Rating A	Rating B	Rating C
produces relevant, accurate and comprehensive written/graphical reports about the use of the Systems Development Life Cycle (SDLC) in a range of situations	produces relevant and accurate written/graphical reports about the use of the Systems Development Life Cycle (SDLC)	produces relevant written and graphical reports about aspects of the use of the Systems Development Life Cycle (SDLC)
creates effective, robust and technically innovative designs and justifies their selection and use of appropriate application tools to develop information system product(s)**	creates effective designs by selecting and using appropriate application tools to develop information system product(s)**	utilises predetermined software designs* and correctly uses a limited set of appropriate application tools to develop information system product(s)**

provides substantial evidence of product and feature strategic testing, evaluation and modification through test plans and written evaluation reports	provides detailed evidence of product and feature testing, evaluation and modification through test plans and written evaluation reports	provides some evidence of product and feature testing, evaluation and modification through test plans and written evaluation reports
develops product(s) that address the scope of the information system project design brief, and which show consideration of a wide range of other alternatives	develops product(s) that address the scope of the information system project design brief, and which show consideration of a limited range of other alternatives	develops product(s) that address the scope of the information system project design brief

* '*predetermined software designs*' include, but are not limited to, design wizards, code snippets, and/or templated websites.

** *Illustrative examples* (*only*): At a 'C' rating the learner uses design templates to create a website or makes a procedures manual; at a 'B' rating the learner uses a content management system (CMS) to create a website or makes an online help manual; and at an 'A' rating the learner creates a website using an integrated software package or a searchable knowledge base database.

Criterion 5: use and evaluate an information system

This criterion is both internally and externally assessed.

The learner:

Rating A	Rating B	Rating C
uses the standard and advanced features of an information systems tool in an effective and efficient manner to input/process data and produce accurate, meaningful and relevant output information*	effectively uses the standard features of an information systems tool to input/process data and produce meaningful and relevant output information*	correctly uses the basic features of an information systems tool to input/process data and produce relevant output information*
applies information systems concepts to explore, use and evaluate unfamiliar information systems	applies information systems concepts to explore, use and analyse unfamiliar information systems	applies information systems concepts to explore and correctly use unfamiliar information systems
develops appropriate and comprehensive test criteria to confirm that all aspects of information systems produce outputs that are accurate and relevant	develops appropriate test criteria to confirm that key components of an information system produce outputs that are accurate and relevant	constructs appropriate test criteria and uses these criteria to confirm accuracy of information systems processes
provides evidence and critical evaluation (including critical analysis, problem identification and possible alternatives or improvements) about whether or not an information system is suitable for achieving its intended purposes	provides evidence and detailed analysis (including reasons, judgments and problem identification) about whether or not an information system is suitable for achieving its intended purposes	provides evidence and explanation (including reasons) about whether or not an information system achieves its intended purposes

* *Illustrative example* (*only*): At a 'C' rating the learner uses a spreadsheet to produce a graph; at a 'B' rating the learner uses spreadsheet formula to solve mathematical calculations; and at an 'A' rating the learner uses spreadsheet formula to solve complex mathematical calculations/or data validation techniques.

Criterion 6: work independently and collaboratively

The learner:

Rating A	Rating B	Rating C
documents their role in facilitating, planning, developing and presenting agreed group tasks,	co-ordinates planning, developing and presenting agreed group tasks	effectively uses self-management strategies in planning, developing

analysing and selecting most appropriate options		and presenting group tasks
works productively with others on collaborative documents and tasks, allocates and accepts task components based on individual strengths and weaknesses, and supports others in achieving agreed goals	works productively with others on collaborative documents and tasks, and supports group and individuals to achieve agreed goals	works productively with others on collaborative documents and tasks to achieve agreed goals
effectively employs a wide range of collaborative strategies to address issues affecting achievement of group goals	employs a range of collaborative strategies to address issues affecting achievement of group goals	employs a limited range of collaborative strategies to address issues affecting achievement of group goals
gives group members constructive, insightful relevant feedback on, and suggestions about, their task performance, in an appropriate manner	gives group members constructive, detailed and relevant feedback on their task performance, in an appropriate manner	gives group members limited relevant feedback on task performance, in an appropriate manner
demonstrates individual and collective responsibility when working in teams through ongoing monitoring and reviewing of progress, effective communication about team goals, facilitating group interaction and exhibiting leadership	demonstrates individual and collective responsibility when working in teams by monitoring and reviewing progress, and effective communication about team goals	demonstrates individual and collective responsibility when working in teams by monitoring and reviewing progress, and through clear communication about team goals

Criterion 7: plan, organise and complete activities using a project management approach

The learner:

Rating A	Rating B	Rating C
uses a wide range of planning and self-management strategies which consistently enables the effective completion of tasks within agreed timelines	uses a range of planning and self-management strategies which usually enables the effective completion of tasks within agreed time frames	uses planning and self-management strategies which facilitate the successful completion of tasks within agreed time frames
uses and selects extensive evidence of accurate and logical planning in written journals/blogs/graphical organisers	uses and selects comprehensive evidence of logical planning in written journals/blogs	uses basic evidence of activity planning when creating written journals/blogs
plans future actions, effectively adjusting goals and plans where necessary to meet new circumstances or conditions	plans future actions, adjusting goals and plans where necessary to meet new circumstances or conditions	uses prescribed strategies to adjust goals and plans where necessary to meet new circumstances or conditions
employs substantial project management tools and formal project management methodologies to aid in planning, organising and completing activities	employs project management tools and methodologies to aid in planning, organising and completing activities	employs basic features of project management tools to aid in planning, organising and completing activities

Criterion 8: communicate ideas and information in a variety of forms

This criterion is both internally and externally assessed.

The learner:

Rating A	Rating B	Rating C
clearly and accurately conveys ideas and basic information using appropriate formats*	clearly conveys ideas and basic information using appropriate	conveys ideas and basic information using appropriate formats*

	formats*	
produces written work in which English usage is correct including grammar, spelling of technical/specialised terms, punctuation, accurate sentence structure, and effective use of paragraphs	produces written work in which English usage is generally correct including grammar, spelling, punctuation, sentence structure, and use of paragraphs	produces written work in which basic English usage is correct, including grammar, spelling of common words, simple punctuation, sentence structure, and use of paragraphs
clearly differentiates the information, images, ideas and words of others from the learner's own	clearly differentiates the information, images, ideas and words of others from the learner's own	differentiates the information, images, ideas and words of others from the learner's own
clearly identifies and formally acknowledges the sources of programming code/instructions and application templates which are not the learner's own	clearly identifies and recognises the sources of programming code/instructions and application templates which are not the learner's own	identifies the sources of programming code/instructions and application templates which are not the learner's own
referencing conventions and methodologies are followed with a high degree of accuracy	referencing conventions and methodologies are followed correctly	referencing conventions and methodologies are generally followed correctly
creates appropriate, well-structured reference lists/bibliographies making use of appropriate digital tools	creates appropriate structured reference lists/bibliographies	creates appropriate reference lists/bibliographies

* '*formats*' include, but are not limited to: oral presentations; written assignments and reports; multimedia presentations and other specific computer application environments such as databases, spreadsheets, infographics, appropriate social media and websites.

Qualifications Available

Information Systems and Digital Technologies Level 3 (with the award of):

EXCEPTIONAL ACHIEVEMENT (EA)

HIGH ACHIEVEMENT (HA)

COMMENDABLE ACHIEVEMENT (CA)

SATISFACTORY ACHIEVEMENT (SA)

PRELIMINARY ACHIEVEMENT (PA)

Award Requirements

The final award will be determined by the Office of Tasmanian Assessment, Standards and Certification from 13 ratings (8 from the internal assessment, 5 from external assessment).

The minimum requirements for an award in Information Systems and Digital Technologies Level 3 are as follows:

EXCEPTIONAL ACHIEVEMENT (EA)
10 'A', 3 'B' ratings (4 'A', 1 'B' from external assessment)

HIGH ACHIEVEMENT (HA)
5 'A', 5 'B', 3 'C' ratings (2 'A', 2 'B', 1 'C' from external assessment)

COMMENDABLE ACHIEVEMENT (CA)
7 'B', 5 'C' ratings (2 'B', 2 'C' from external assessment)

SATISFACTORY ACHIEVEMENT (SA)
11 'C' ratings (3 'C' from external assessment)

PRELIMINARY ACHIEVEMENT (PA)
6 '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

The Department of Education's Curriculum Services will develop and regularly revise the curriculum. This evaluation will be informed by the experience of the course's implementation, delivery and assessment.

In addition, stakeholders may request Curriculum Services to review a particular aspect of an accredited course.

Requests for amendments to an accredited course will be forward by Curriculum Services to the Office of TASC for formal consideration.

Such requests for amendment will be considered in terms of the likely improvements to the outcomes for learners, possible consequences for delivery and assessment of the course, and alignment with Australian Curriculum materials.

A course is formally analysed prior to the expiry of its accreditation as part of the process to develop specifications to guide the development of any replacement course.

Course Developer

The Department of Education acknowledges the significant leadership of Mr Jeff Briscoe, Ms Cheryl Davis, Mr Martin Chambers and Dr Ken Price in the development of this course.

Expectations Defined By National Standards

There are no statements of national standards relevant to this course.

Accreditation

The accreditation period for this course has been renewed from 1 January 2022 until 31 December 2023.

During the accreditation period required amendments can be considered via established processes.

Should outcomes of the Years 9-12 Review process find this course unsuitable for inclusion in the Tasmanian senior secondary curriculum, its accreditation may be cancelled. Any such cancellation would not occur during an academic year.

Version History

Version 1 – Accredited on 10 September 2017 for use from 1 January 2018. This course replaces ITS315113 Information Systems and Digital Technologies that expired on 31 December 2017.

Accreditation renewed on 22 November 2018 for the period 1 January 2019 until 31 December 2021.

Version 1.a - Renewal of Accreditation on 14 July 2021 for the period 31 December 2021 until 31 December 2023, without amendments.

Appendix

Line of Sight – *Information Systems and Digital Technologies* Level 3

Learning Outcomes	***Criteria***	***Criteria and Elements***	***Content/Work Requirements***
identify, analyse and solve real world information problems	1	1E1, 1E2, 1E3, 1E4	A – Describing Information Systems
describe, explain and analyse the components of an information system, and the inter-relationships between these components	2	2E1, 2E2, 2E3	A – Describing Information Systems
describe, explain and analyse social, legal and ethical issues associated with information systems	3	3E1, 3E2, 3E3, 3E4	D – Social, Ethical and Legal Issues of Information Systems
design and develop an information system	4	4E1, 4E2, 4E3, 4E	C, E – Systems Development Lifecycle: Design Develop and use the Tools of an Information System E – Design Develop and use the Tools of an Information System F – Applied IS Case Study (Major Project)
use and evaluate an information system	5	5E1, 5E2, 5E3, 5E4	E – Design Develop and use the Tools of an Information System
work independently and collaboratively on information systems projects	6	6E1, 6E2, 6E3, 6E4, 6E5	F – Applied IS Case Study (Major Project)
plan, organise, and complete activities, using a project management approach	1, 7	1E3, 1E4 7E1, 7E2, 7E3, 7E4	F – Applied IS Case Study (Major Project) B – Project Management (including the Project Lifecycle)
communicate ideas and information in a variety of forms	8	8E1, 8E2, 8E3, 8E4, 8E5, 8E6	F – Applied IS Case Study (Major Project) D – Social, Ethical and Legal Issues of Information Systems

Supporting documents including external assessment material

- ITS315113 Assessment Report 2016.pdf (2018-02-07 01:28pm AEDT)
- ITS315113 Exam Paper 2016.pdf (2018-02-07 01:33pm AEDT)
- ITS315113 Exam Paper 2017.pdf (2018-02-07 01:33pm AEDT)
- ITS315117 Assessment Report 2017.pdf (2018-02-28 03:54pm AEDT)
- ITS315118 TASC Exam 2018.pdf (2018-11-22 12:19pm AEDT)
- ITS315118 - Assessment Report 2018.pdf (2019-01-29 08:44am AEDT)
- ITS315118 Information Systems and Digital Technologies TASC Exam Paper 2019.pdf (2019-11-20 04:51pm AEDT)
- ITS315118 Assessment Report 2019.pdf (2020-01-24 02:58pm AEDT)
- ITS315118 Information Systems and Digital Technologies TASC Exam Paper 2020.pdf (2020-11-18 07:17pm AEDT)
- ITS315118 Assessment Report 2020.pdf (2021-01-13 10:41am AEDT)
- ITS315118 External Assessment Specifications.pdf (2021-03-25 10:19am AEDT)
- ITS315118 Information Systems and Digital Technologies TASC Exam Paper 2021.pdf (2022-01-24 02:55pm AEDT)

Tasmanian Government

© 2024 TASC. All rights reserved.