Content Descriptions

Australian Curriculum Levels 9-10	Western Australian Year 9 Syllabus
Digital systems	**Digital systems**
Investigate the role of hardware and software in managing, controlling and securing the movement of and access to data in networked digital system (ACTDIK034)	Role of hardware and software in managing, controlling and securing the movement of data in a digital system (ACTDIK034)
Representation of data	**Representation of data**
Analyse simple compression of data and how content data are separated from presentation (ACTDIK035)	Different methods of manipulation, storage and transmission of data (ACTDIK035)
Collecting, managing and analysing data	**Collecting, managing and analysing data**
Develop techniques for acquiring, storing and validating quantitative and qualitative data from a range of sources, considering privacy and security requirements (ACTDIP036) Analyse and visualise data to create information and address complex problems, and model processes, entities and their relationships using structured data (ACTDIP037)	Explore techniques for acquiring, storing and validating quantitative and qualitative data (ACTDIP036) Analyse and visualise data to create information and address complex problems (ACTDIP037)
Investigating and defining	**Investigating and defining**
Define and decompose real-world problems precisely, taking into account functional and non-functional requirements and including interviewing stakeholders to identify needs (ACTDIP038)	Identify and define the needs of a stakeholder, to create a brief, for a solution (WATPPS54) Investigate a selection of components/resources to develop solution ideas, identifying and considering constraints (WATPPS55)
Generating and designing	**Designing**
Design the user experience of a digital system by evaluating alternative designs against criteria including functionality, accessibility, usability, and aesthetics (ACTDIP039) Design algorithms represented diagrammatically and in structured English and validate algorithms and programs through tracing and testcases (ACTDIP040)	Apply design thinking, creativity and enterprise skill (WATPPS56) Design solutions assessing alternative designs against given criteria, using appropriate technical terms and technology (WATPPS57)
	Data Implementation
	Design the user experience of a digital system (ACTDIP039) Design algorithms, represented diagrammatically and in structured English, and validate plans and programs through tracing (ACTDIP040)
Producing and implementing	**Producing and implementing**
Implement modular programs, applying selected algorithms and data structures including using an object-oriented programming language (ACTDIP041)	Select, and safely implement and test appropriate technologies and processes, to make solutions (WATPPS58)
	Data Implementation
	Implement and apply data storage and organisation techniques (ACTDIP041)
Evaluating	**Evaluating**
Evaluate critically how student solutions and existing information systems and policies, take account of future risks and sustainability and provide opportunities for innovation and enterprise (ACTDIP042)	Evaluate design processes and solutions against student developed criteria (WATPPS59)
Collaborating and managing	**Collaborating and managing**
Create interactive solutions for sharing ideas and information online, taking into account safety, social contexts and legal responsibilities (ACTDIP043) Plan and manage projects using an iterative and collaborative approach, identifying risks and considering safety and sustainability (ACTDIP044)	Work independently, and collaboratively to manage projects, using digital technology and an iterative and collaborative approach. Considers time, cost, risk and safety (WATPPS60)
	Data Implementation
	Create and use interactive solutions for sharing ideas and information online, taking into account social contexts (ACTDIP043)

Achievement Standards

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By the end of Year 10, students explain the control and management of networked digital systems and the security implications of the interaction between hardware, software and users. They explain simple data compression, and why content data are separated from presentation. Students plan and manage digital projects using an iterative approach. They define and decompose complex problems in terms of functional and non-functional requirements. Students design and evaluate user experiences and algorithms. They design and implement modular programs, including an object-oriented program, using algorithms and data structures involving modular functions that reflect the relationships of real-world data and data entities. They take account of privacy and security requirements when selecting and validating data. Students test and predict results and implement digital solutions. They evaluate information systems and their solutions in terms of risk, sustainability and potential for innovation and enterprise. They share and collaborate online, establishing protocols for the use, transmission and maintenance of data and projects.	At Standard, students identify the role of hardware and software have in managing, controlling and securing the movement of data in digital systems. They identify different methods used for manipulation, storage and transmission of data. Students explore techniques for acquiring, storing and validating quantitative and qualitative data. They analyse and visualise data to create information and address complex problems. Students create a design for the user experience of a digital system supported by drafts with annotations. They design algorithms, represented diagrammatically and in structured English, and validate plans and programs through tracing. Students implement and apply data storage and organisation techniques. They create and use interactive solutions for sharing ideas and information online, taking into account social contexts. In Digital Technologies, students identify and define the needs of a stakeholder to create a brief for a solution. They investigate a selection of components/resources to develop ideas, identifying and considering constraints. Students apply design thinking, creativity and enterprise skills. They provide design solutions assessing alternative designs against given criteria, using appropriate technical terms and technology. Students select, test and safely implement appropriate technologies and processes to make solutions. They evaluate design processes against student-developed criteria. Students work independently and collaboratively to manage projects, using digital technology and an iterative and collaborative approach. They consider time, cost, risk and safety.