# **DT Level 1 Course Outline 1 - Digital Media**

# Guide to aid teacher planning - designed to be printed or viewed in A3, landscape.

## Purpose

This example Course Outline has been produced to help teachers and schools understand the new NCEA Learning and Assessment matrices and could be used to create a year-long programme of learning. It will give teachers ideas of how the new standards might work to assess the curriculum at a particular level.

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| **Significant Learning** | **Learning activities and assessment opportunities**  Assessment for learning happens often throughout the year. Evidence may also be collected for summative assessment. | **Duration**  Total of 32 weeks |
| evaluate the fitness for purpose of digital technologies outcomes by considering manaakitanga, kaitiakitanga and the outcomes’ social and physical environments  understand that digital technologies and the concepts that underpin them are influenced by the people that create them and the contexts in which they are developed  be aware of relevant occupational safety and health practices | Introduction to Digital Technologies Overview of digital technologies and introduction to the idea of their impact.  Review examples of technology and how it impacts humans and the world around us.  Relevant context examples:   * Impacts of social media – positives and negatives. What makes different ones better or worse to use? * Video games - different perspectives. What makes games fun? What makes them frustrating? * Filmmaking and animation as modes of communication. Storytelling and the ways that can be used for education, entertainment, passing on knowledge, connecting, and giving people a voice.   Class exercises give students a knowledge foundation and context around moving into the next skills-based sections. | 2 weeks |
| follow a technological process or tikanga to design, develop, and document digital outcomes  use appropriate standards and conventions or for digital technologies domains  apply appropriate tools and use information from testing to improve the quality of digital technologies outcomes  understand how compression enables widely used technologies to function | Introduction to Animation Students will learn basic techniques in animation, such as:   * drawing and text tools * keyframes, motion, easing etc * basic video editing: cutting, transitions, adding audio tracks   Class activities around planning:   * Identifying an audience, communication purpose, and key messages. * Storytelling - how to plan a good story, characters etc. * Storyboarding   Class exercises give students an opportunity to practice skills and provide an opportunity for ***formative*** ***feedback***. | 4 weeks |
| understand that digital technologies and the concepts that underpin them are influenced by the people that create them and the contexts in which they are developed  understand that digital technologies, and the concepts that underpin them, impact on people, societies, and cultures  follow a technological process or tikanga to design, develop, and document digital outcomes  use appropriate standards and conventions or for digital technologies domains  apply appropriate tools and use information from testing to improve the quality of digital technologies outcomes  understand that digital devices can collect, store, and share data, and the ethical issues related to this | Introduction to Web Design Overview and history of the internet and web design.  Review examples of web development and the purposes and audiences of different types of websites.  Relevant context examples:   * What types of websites are there? * Basic information websites - what do we use them for? * Social media websites. * Club/organisation websites. * Interactive websites, for example, the one that lets you zoom in and out from microscopic levels to the galaxy/wider universe.   Class activities to teach basic techniques in HTML/CSS:   * Structure tags such as doctype, title. * Headings, paragraphs, and lists. * Images. * Anchor tags with links to other pages and external websites. * Semantic tags like header, section, footer. * CSS for styling.   Class activities around planning:   * Identifying an audience, communication purpose, and key messages. * Layout design and hierarchy of information. * Wireframing for prototyping.   Class exercises give students an opportunity to practice skills and provide an opportunity for ***formative*** ***feedback***. | 4 weeks |
| understand that digital technologies and the concepts that underpin them are influenced by the people that create them and the contexts in which they are developed  understand that digital technologies, and the concepts that underpin them, have an impact on people, societies, and cultures  prioritise user experience in design – practise manaakitanga by applying relevant design principles, mātāpono Māori, and usability principles  recognise that through kotahitanga, and creative and critical thinking they can develop new and innovative solutions to existing problems | Introduction to Interface Usability Learn about user interfaces and explore examples of good and bad ones and what makes them that way.   * Exploration of mātāpono Māori as lenses that can be used when thinking about creating something for people to use. * Learn about usability heuristics and principles and explore examples of them in a range of different user interfaces. * Practice evaluating interfaces in terms of usability principles and mātāpono Māori and suggesting improvements.   Learning in this section will help learners to build the knowledge needed for ***AS92006 Demonstrate understanding of interface usability*** and to practice applying this knowledge to a range of user interfaces. It will also feed into the ***AS92007 Design a digital technologies outcome*** process as they will have the opportunity to apply their knowledge to their own outcome designs. | 2 weeks |
| investigate and consider possible digital solutions for authentic contexts or issues  follow a technological process or tikanga to design, develop and document digital outcomes  prioritise user experience in design – practise manaakitanga by applying relevant design principles, mātāpono Māori, and usability principles  apply appropriate tools and use information from testing to improve the quality of digital technologies outcomes  be respectful and open-minded whilst considering the cultural safety of themselves and others  recognise that through kotahitanga, and creative and critical thinking they can develop new and innovative solutions to existing problems  understand how digital technologies impact on end users by considering the following mātāpono Māori:  kotahitanga, whanaungatanga, manaakitanga, wairuatanga, kaitiakitanga and tikanga  anticipate and find solutions to problems | Outcome Design Reinforce the ideas around the purposes of websites and animations and the need to make them appropriate for the target audience. They can be used as tools to communicate a message, connect people, engage people, or for entertainment.  **Learners choose whether they want to design a website or animation.**  Exploration of mātāpono Māori and usability heuristics lenses that can be used when thinking about creating something for people to use.  Exploration of design tools (wireframes, storyboards, etc).  Overview of the Technological design process (scoping a project, user requirements, designing and refining ideas, communication and evaluation of design).  Begin ***AS92007 Design a Digital Technologies*** Outcome - Based on AA1.2a Develop Activity Kōrero Paki  Identify a story to tell through either animation or a website.   * Brainstorm story ideas. * Brainstorm who the audience of the outcome might be and what their needs are. * Consider how mātāpono Māori/usability heuristics can be used to ensure the design is fit for purpose. * Using a template, students identify the purpose and end users of the animation, as well as basic requirements.   Design ideas.   * Generate a range of concepts. * Use research into the chosen audience and story to inform concepts. * Use feedback to select a concept to develop. * Develop the concept using feedback. * Apply design principles to improve the design.   Final design.   * Provide evidence that the proposed outcome addresses the purpose and meets the requirements of the club/group/user (fit for purpose). * Provide evidence of how mātāpono Māori contributed to the design’s fitness for purpose.   Work produced as part of this project to contribute to the formative and summative assessment of ***AS92007 Design a digital technologies outcome*** (curated digital portfolio to be completed in term 4).  Learning covered/work produced during this unit may contribute or feed into the assessment of ***AS92005 Develop a digital technologies outcome.*** | 5 weeks |
| understand that digital technologies and the concepts that underpin them are influenced by the people that create them and the contexts in which they are developed  understand that digital technologies, and the concepts that underpin them, have an impact on people, societies, and cultures  evaluate the fitness for purpose of digital technologies outcomes by considering manaakitanga, kaitiakitanga and the outcomes’ social and physical environments | Interface Usability Recap  * Revisit usability heuristics/mātāpono Māori in preparation for the external at the end of term 2. * Generate screenshots (as allowed) of an interface they have reviewed to take into CAA.   Class exercises would lead into learners sitting the ***AS92006* *Demonstrate understanding of interface usability*** at the relevant time. | 1 weeks |
| follow a technological process or tikanga to design, develop and document digital outcomes  use appropriate standards and conventions or for digital technologies domains  anticipate and find solutions to problems  apply appropriate tools and use information from testing to improve the quality of digital technologies outcomes  work collaboratively and engage in talanoa, korero and wānanga to share perspectives and values  use appropriate strategies to manage their time and resources for completing a project  evaluate the fitness for purpose of digital technologies outcomes by considering manaakitanga, kaitiakitanga and the outcomes’ social and physical environments | Outcome Development Building on the learning earlier in the year, students will follow a technological process to develop their animation or website.  Class exercises teach students about managing timeframes and about effective feedback and testing strategies.  Based on their design, learners will now develop the animation or website they have designed. They might:   * break the outcome into components * use an iterative process to develop their outcome * use a range of basic techniques in appropriate software * consider usability and design principles in their development * consider mātāpono Māori when developing their outcome * test their outcome with end users, and use feedback to improve their outcome * export their completed animation using appropriate parameters for file type, compression, etc * upload their completed website to an appropriate space to share with the teacher and/or class.   Work produced as part of this project may contribute to formative and summative assessment of ***AS92005 Develop a digital technologies outcome.*** | 5 weeks |
| understand the nature of computation and apply appropriate reasoning about the behaviour of basic programs  apply basic computational thinking skills (decomposition, abstraction, pattern recognition, algorithms, logic, and evaluation) to write and debug computer programs.  determine the cost (or computational complexity) of two iterative algorithms for the same problem size  demonstrate learner agency and persevere when things fail  anticipate and find solutions to problems  use appropriate strategies to manage their time and resources for completing a project | Programming Review of different programming languages / platforms to demonstrate programming concepts are very similar across different languages.  Class activities built around small challenges or programs that teach and reinforce programming concepts of:   * collecting input and producing output * the importance of thoughtful commenting * storing data in variables and constants (or a range of data types) * if / else / elseif conditions and associated logic * for loops and while loops * storing and accessing data stored in collections (lists, arrays etc) * modular programming (if time allows).   Class activities to teach students to design algorithms to solve problems (breaking down problems into smaller parts) and to teach students that not all algorithms have the same level of efficiency.  Class activities designed to teach students strategies to find and debug common errors in programs.  Class activities designed to teach students about how to check and validate user input to avoid errors.  Learning covered as part of this unit will contribute to the assessment of ***AS92004 Create a computer program*** *using the assessment activity 1.1b The Quiz.* | 8 weeks |