LEVEL 1 Digital Technology
1TECC

ALBANY SENIOR HIGH SCHOOL

What is this course about?

This course is designed to introduce students to design thinking and collaborative project work while building their investigative skills in computer science. A key feature of the course is the use of project-based assessments, where students explore real-world problems and apply their learning to create practical solutions. Students will have the opportunity to develop a working outcome in areas such as web development, game making, 3D modelling, game character design, and electronics. By the end of the course, they will have created a functional digital product based on their chosen area of interest. Prior experience with programming or scripting languages is not required to take this course in Year 11.

What sorts of things will I do?

In this course, you can choose to create an online game using a game engine such as Godot, Unity, or a similar platform. Another popular option is to design a website using web technologies like HTML, CSS, and Bootstrap.

Some learners enjoy designing 3D game characters using Blender, which can be a valuable contribution to group projects. Others have chosen to develop electronics-based outcomes, such as building a drone or a 3D-printed game console.

Alongside your practical project work, you will also investigate an important computer science concept—such as human-computer interaction (HCI). This investigation will help you deepen your understanding and apply new insights to improve your own digital project.

Learning capabilities / critical skills

Digital Technologies is a broad subject that covers many domains, for example: software programming, electronic environments and embedded systems, digital information systems and digital media.

- The discipline of Digital Technologies embodies whanaungatanga.
- Outcomes are made by people, for people, within cultural, social, and environmental contexts
- Digital outcomes are created for a purpose by following established processes
- The discipline of Digital Technologies embodies auahatanga. Outcomes solve problems and enhance and expand human possibilities
- All digital technologies are underpinned by algorithms and computer science principles

Nga Rau o Te Whariki o ASHS
Rangatiratanga (self-determination) supports ākonga to achieve. Thinking and meaning-making are promoted. Learning is meaningful and connected.

To experience success, students will have opportunities to develop their learning dispositions through:

Engagement:	Managing self:	Learning relationships:
- thinking about and actively engaging with the content/concepts - Reviewing the marking criteria for the assessment so they know where to focus and what is required to achieve	- identified and planned for any work that needs completing or reviewing - set a goal for what I want to complete/achieve in the lesson	- asking questions of the teacher to help understanding of the content - taking the opportunity to work in different groups and seeking various perspectives/peer feedback

What standards can I enter?

Your teacher will work with the whole class and with you to devise a learning programme that is responsive to your strengths, interests, and one that sets you up to aim high and achieve your potential.

NCEA	Standard Number	Name of standard	Assessment Mode	Credits	Timeframe
INT	AS92004 - 1.1 Or AS92005 - 1.2 Learners will be given a chance to select either one of the assessments.	1.1 Create a computer program	Portfolio & Outcome	5	Term 2+3
INT		1.2 Develop a digital technologies outcome	Portfolio & Outcome		
EXT	AS92006 - 1.3	Demonstrate understanding of usability in human-computer interfaces	Exam	5	Term 3+4
ASHS Assessed		Induction and Skill portfolio			Term 1 3 weeks

BYOD requirements

For the/Digital Technology subject, students need laptops powerful enough to run software like Blender for 3D modelling and Godot or Unity for game development.

This typically means a Windows laptop with at least an i5 processor or higher.

If you're considering a Mac, a MacBook Air is acceptable, though a MacBook Pro would be a better option.

Please note that Chromebooks are not suitable for this subject.

Frequently asked questions

I am interested in doing electronics, is this possible?
Yes, if you have a clear project idea using a microcontroller. We are here to accommodate your interest. You are expected to carry out independent research and manage your own project. With regards to the microcontrollers, you will be encouraged to use Arduino or ESP32 to program. You will have access to a 3D printer to create other required parts for your project.

I am only interested in Web Development?
Yes, we will have a chance to cover HTML/CSS/JQuery and other javascript libraries to make an authentic website. You will be required to work to create a website for a specific purpose using an iterative development process.

I am only interested in programming?
Yes, we will have a chance to learn Python programming language to create a computer program. In the past, students have created an arcade game, a trivia quiz, a hangman type game or a takeaway ordering program. We will discuss the required programming styles so you will follow correct conventions when coding. If you are interested in using any other programming languages including Java, Javascript, C#, GoDot or Unity, you are welcome to negotiate this with the teacher.

I have a great project in mind that I would like to work on with some other students, is this possible?
Yes. you are encouraged to find an authentic project context. We find that when students are really interested in the project, they will generally produce quality outcomes. Please let your teacher know your intentions before you progress into the project. We will need to ensure that the project has enough scope to meet all criteria in the standard.

I am new to the course, is this going to be too hard?
You will need to do some online homework tutorials, serious study is needed, please consult with the teacher to get information on what you need to do. I won't lie, it is hard, but it has been done before and if you are really keen on computer science then dedication and commitment to homework will definitely be your friend. If you commit, then the teacher will also give you some of their own time via lunchtime workshops.

Vocational Pathways

You may have heard already, IT jobs in New Zealand are on the skills shortage list. With a good qualification and the right attitude, you should be able to find a rewarding IT job in any location throughout the world.

For example, Amazon has announced that they will create a data centre in Auckland. They are planning to spend $7.5 billion dollars and create 1000 IT-related jobs.

Our students in this course will often progress to a computer science or software engineering course in a New Zealand university.

Subject requirements for assessment authenticity

Students have to sign the external submission sheet/envelope authenticity statement.