

Curriculum Plan

Technologies

A summary of the content taught within the Technologies subjects offered at the Australian Islamic College

Curriculum Plan

Technologies

The Department aims to ensure that students develop understandings, skills and attitudes relevant to both individual and vocational needs, thereby enabling them to fulfil their potential and contribute positively to society. Students develop relevant skills and understandings in a wide range of areas relating to business and information technologies.

All Technology and Enterprise subjects provide students with the underlying skills base for further study and development in Senior School. These fundamental skills are even more important now that students are able to study Senior School courses in this area which lead to tertiary entrance scores. The ability to apply learning from a number of areas will be an advantage in gaining university entry for many students.

A lot has changed with the implementation of the national curriculum. At the AIC we are using it as an opportunity to integrate technology and new teaching tools into the classroom.

Lower School Years 7 to 10

The technology and enterprise area offers the following disciplines for year 7 to 10 Students.

Subject	Year Group	Hours per week
Design and Technology <ul style="list-style-type: none"> • Woodwork • Food and Technology • Engineering principles and systems • Materials and technologies specialization 	7-9	1
Digital Technologies	7-9	2.5

Upper School Years 11 to 12

The technologies area offers the following disciplines for year 11 to 12 Students.

Subject	Year Group	No of Hours per week
Applied Information Technology <ul style="list-style-type: none"> • ATAR Unit 1-4 • General Unit 1-4 	11&12	5
Computer science <ul style="list-style-type: none"> • ATAR Unit 1-4 • General Unit 1-2 	11&12	5
Materials Design & Technology (Textiles) <ul style="list-style-type: none"> • General Unit 1-4 	11 & 12	5

Guidelines for the Delivery of the curriculum

1. Teaching and Learning Programs:

All teachers should distribute a copy of teaching program, assessment policy. All year 7-12 programs must be strictly followed. Any part of the program must not be changed without prior permission or consultation with the HOLA. All assessment tasks mentioned in this program must be administered all the time unless otherwise discussed with the HOLA. Any modification /change in the program/ assessments tasks must be discussed in the general departmental meeting.

2. Assessments:

All formal assessments must be carried out on the same week for respective year levels. Teachers are given responsibility for writing some part of the tests; answer keys for marking and the final test are compiled by HOLA. Feedback must be given to students as soon as possible and students should do the correction in their own time and must understand their mistakes for that particular test.

The school policy is to evaluate students twice a term on the term test and the assessment task.

3. Reporting and Marks Analysis:

Reports for every year group need to be submitted electronically on the AIC info. Names of all the students on risk from year 12 should be given to the HOLA as well to the Deputy Principal (Sr. Khurshida Islam) monthly.

Once the marks are entered by the teachers, teachers send their analysis to the HOLA.

Then HOLA analyses the results and send the report to the principal and to the Deputy Principal with the board report.

4. Teacher's electronic resources and the implementation of electronic student work

All teachers must have an Edmodo and Code Avengers account where they can keep track of all students corrected tests, student course progress and content, and an electronic copy of all student programs.

6. File inspections:

With prior notification, the HOLA will be checking student' electronic work. All teachers will be given a checklist prior to the file inspection date.

7. Teaching Year 12 subjects:

The programs, tasks and exams for the year 11 and 12 courses is managed by the teacher teaching that course. The teachers has to follow all the programs designed by curriculum council and follow the guidelines mentioned by Curriculum council.

All teachers teaching Year 12 subjects must provide students sufficient study materials and past WACE examination papers and must ensure that students practice. Fortnightly feedback about the students' performance should be given to HOLA and Deputy Principal.

8. External Moderation for year 12 subjects:

Teachers teaching year 12 subjects should do small group moderation if the number of students is less than 10. In 2015, MPA Stage 3 is moderated with Ocean Reef Senior High School.

9. Internal Moderation

Internal moderation is done once a semester where teachers from Kewdale, Thornlie and Dianella come to Kewdale and moderate student work.

10. Computer Skills competitions

In 2015 the ICAS computer skills competition was undertaken in May. Furthermore the ICT Young Explorers Competition is being undertaken by select Year 8 and 9 students.

11. Students' work samples

Student work samples are readily available online 24/7. Teachers must share student samples in the shared X Drive.

12. Relief work

Teachers must provide instructions for relief teachers via i-wise in the central office if they are not coming to school. Upper school teachers require to attach relief work which is not part of an electronic course in i-wise with specific instructions.

13. Professional Development

Teachers must get their P.D approve from the HOLA before they register for the P.D. The HOLA has to receive Principal approval.

14. Consensus Moderation

Teachers teaching year 12 must attend **consensus moderation meetings**. The information will be sent to the teachers by Deputy Principal.

15. Dept. Meetings

All teachers must attend dept. meetings organized by their HOLA. There are two to three department meetings per term.

16. User name and passwords for students and teachers

Below are the accounts for each student and teacher in the department, which are stored in a centralized excel spreadsheet for reference.

1. Student Edmodo Accounts:
2. Student Code Combat Accounts:
3. Student Code Avengers Accounts:
4. Teachers Appretio Accounts: Emailed to all staff via their school email address.
5. Teachers Office 365 Accounts: Setup by Br. Omar and Br. Khayat.
6. Teachers Network Login Accounts: Teachers account setup by Br. Omar during induction phase.

17. Use of Cameras

Teachers need to book cameras at least 48 hours before leasing. The technologies department currently has four DSLR cameras.

18. Lab and Laptop Bookings

Please keep the following in mind when booking a lab or laptops

- 1) Please send Br. Dervish an i-mail or email in regards to your booking request with a minimum of one day notice (the earlier the request, the more likely you are to receive your request). In this i-mail I will require the following information.
 - a. The date and period.
 - b. The number of devices you require.

Note: You will not be able to borrow even a single laptop without a booking, and the caretaker teacher maintains the right to decline your request without a booking.

- 2) Once the booking is confirmed and the period comes, the teacher (and several students) are required to come to the caretakers' room, and sign a registry confirming you are taking laptops/booking a lab. Please be on time as caretaker teachers have their own classes to attend to.
 - a. Have approximately one student accompany you for every 5 laptops, as laptops have been dropped this term.

Note: If you do not come in person and sign the registry you will not be given access to any laptops. Once you sign the registry you are liable for any damages during the period of your use, so keep a watchful eye.

- 3) A technology lab is not somewhere where students' are distracted. While the overwhelming majority once again are diligent and ensure students' are working throughout the period, students' who are off-topic are the students who damage equipment. Please ensure you are not marking, or distracted when supervising in a technology lab.
- 4) When returning the laptops or leaving the technology lab, leave it as you saw it.

This means:

- Ensure chairs are pushed in,
- Keyboards and mice placed neatly,
- Computers logged off, and
- No rubbish is left behind.
- No equipment is marked including tables and chairs.
- Ensure laptops are returned to the same bay they were taken from in their sleeves.

- 5) To all caretaker teachers, please be aware that the laptops are the property of the College and every single teacher/student has the right to use them. If you are not in a period which is not marked on your timetable as a technology class, please let me know and I will assure you have the proper provisions during these periods. Otherwise bookings will be made, and you will be informed of bookings, however I do not require your confirmation as this will cause unforeseeable delays.

18. Resources and other issues

Teachers who require additional technological resources are to request them from the HOLA so that they may be organized.

Subject Offerings

Design and Technology:

In 2013, The Australian Islamic College, Kewdale Campus, introduced Design and Technology into the curriculum for Year 7,8 and 9 students. The focus of the courses will be to introduce students to **tools** that offer pathways into apprenticeships. The rationale for choosing tools that relate to professional vocations is based on parental expectations of students attending The Australian Islamic College.

Year 7: Project to make a **Book Holder**

Year 8: Project to make a **Chair**

Year 9: Project to make a **Table**

Design and Technology course also offer instruction on the fundamental concepts that inform health and safety risks and procedures which relate to materials.

Please refer for the next page for **Lower school Digital Technologies**

Year 7 Digital Technologies

Year level description

Learning in Digital Technologies focuses on further developing understanding and skills in computational thinking such as decomposing problems and prototyping; and engaging students with a wider range of information systems as they broaden their experiences and involvement in national, regional and global activities.

By the end of Year 7, students will have had opportunities to create a range of digital solutions, such as interactive web applications or programmable multimedia assets or simulations of relationships between objects in the real world.

In Year 7, students analyze the properties of networked systems and their suitability and use for the transmission of data types. They acquire, analyze, validate and evaluate various types of data, and appreciate the complexities of storing and transmitting that data in digital systems. Students use structured data to model objects and events that shape the communities they actively engage with. They further develop their understanding of the vital role that data plays in their lives, and how the data and related systems define and are limited by technical, environmental, economic and social constraints.

They further develop abstractions by identifying common elements while decomposing apparently different problems and systems to define requirements, and recognize that abstractions hide irrelevant details for particular purposes. When defining problems, students identify the key elements of the problems and the factors and constraints at play. They design increasingly complex algorithms that allow data to be manipulated automatically, and explore different ways of showing the relationship between data elements to help computation, such as using pivot tables, graphs and clearly defined mark-up or rules. They progress from designing the user interface to considering user experience factors such as user expertise, accessibility and usability requirements.

They broaden their programming experiences to include general-purpose programming languages, and incorporate subprograms into their solutions. They predict and evaluate their developed and existing solutions, considering time, tasks, data and the safe and sustainable use of information systems, and anticipate any risks associated with the use or adoption of such systems.

Students plan and manage individual and team projects with some autonomy. They consider ways of managing the exchange of ideas, tasks and files, and techniques for monitoring progress and feedback. When communicating and collaborating online, students develop an understanding of different social contexts, for example acknowledging cultural practices and meeting legal obligations.

Achievement standard

By the end of Year 7, students distinguish between different types of networks and defined purposes. They explain how text, image and audio data can be represented, secured and presented in digital systems.

Students plan and manage digital projects to create interactive information. They define and decompose problems in terms of functional requirements and constraints. Students design user experiences and algorithms incorporating branching and iterations, and test, modify and implement digital solutions. They evaluate information systems and their solutions in terms of meeting needs, innovation and sustainability. They analyze and evaluate data from a range of sources to model and create solutions. They use appropriate protocols when communicating and collaborating online.

Source: Australian Curriculum, Assessment and Reporting Authority (ACARA), *Australian Curriculum Digital Technologies for Foundation–10*, <http://www.australiancurriculum.edu.au/technologies/digital-technologies/curriculum/f-10?layout=1>

Term overview

Term 1	Term 2	Term 3	Term 4
<p>Digital Data (Binary) & Data Transmission (Networking & Protocols)</p> <p>Students at AIC will learn to convert between decimal and binary, and identify that the characters in text correspond to numbers defined by the character set ASCII.</p> <p>AIC ensures that students have an understanding that networks have components, for example hubs, switches routers and bridges, control the movement of the data and that the characteristics of these components impact on the operation (speed and security) of networks.</p> <p>At AIC we ensure that students recognise that there are different communications protocols for transmitting data in networks, for example</p>	<p>Databases, Programming in Html – Developing Webpages</p> <p>At the AIC students are introduced to the core concepts of computer-programming in Html. They will develop an understanding of the language of web design in Html and CSS as well as the foundations of databases.</p> <p>Students will learn to describe the attributes of complex objects, for example defining the records, fields, formats and relationships of a simple dataset.</p> <p>AIC endeavours to teach students to create a web-based project that involves modifying an existing website template or writing HTML and cascading style sheets (CSS), for example using</p>	<p>Programming in Java</p> <p>At the AIC students are introduced to the core concepts of computer-programming in Java. They will learn to create apps and games in Java.</p> <p>Students at the AIC aim to develop and modify digital solutions by implementing instructions contained in algorithms through programs. They create programs based primarily on text based input and output.</p> <p>Students at the AIC will incorporate Calculations and Variables, If statements and Booleans, While Loops, For loops and Testing, String Functions, Functions, Math Object, Array and Bonus to complete challenges and projects.</p>	<p>Digital Imaging</p> <p>AIC ensures that students gain problem-solving skills by identifying needs and opportunities for new and better solutions.</p> <p>Students are encouraged to use idea generation techniques to come up with creative and innovative outcomes. They will learn to prepare and implement time and action plans in design projects.</p> <p>Students at AIC will learn to manage material, tools, techniques and evaluate the role of project management when developing the design project.</p>

Identify curriculum

Teaching and learning

		<p>hypertext transfer protocol (HTTP) is used for transferring web page files in a browser, file transfer protocol (FTP) is used for sending and receiving any files over a network and transmission control protocol/internet protocol (TCP/IP) s used for controlling file transfers over the internet.</p>	<p>web-authoring software and CSS to create a website that allows customers to interact with an enterprising solution.</p>		<p>AIC emphasises on experimentation to assess the suitability of design ideas, refine them to address the needs and opportunities and optimise design solutions.</p> <p>Students will take into consideration sustainable materials, tools, techniques and design ideas to develop the design projects and demonstrate safe work practices.</p>
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Year 8 Digital Technologies

Year level description

Learning in Digital Technologies focuses on further developing understanding and skills in computational thinking such as decomposing problems and prototyping; and engaging students with a wider range of information systems as they broaden their experiences and involvement in national, regional and global activities.

By the end of Year 8, students will have had opportunities to create a range of digital solutions, such as interactive web applications or programmable multimedia assets or simulations of relationships between objects in the real world.

In Year 8 students further develop abstractions by identifying common elements while decomposing apparently different problems and systems to define requirements, and recognize that abstractions hide irrelevant details for particular purposes. When defining problems, students identify the key elements of the problems and the factors and constraints at play. They design increasingly complex algorithms that allow data to be manipulated automatically, and explore different ways of showing the relationship between data elements to help computation, such as using pivot tables, graphs and clearly defined mark-up or rules. They progress from designing the user interface to considering user experience factors such as user expertise, accessibility and usability requirements.

They broaden their programming experiences to include general-purpose programming languages, and incorporate subprograms into their solutions. They predict and evaluate their developed and existing solutions, considering time, tasks, data and the safe and sustainable use of information systems, and anticipate any risks associated with the use or adoption of such systems.

Students plan and manage individual and team projects with some autonomy. They consider ways of managing the exchange of ideas, tasks and files, and techniques for monitoring progress and feedback. When communicating and collaborating online, students develop an understanding of different social contexts, for example acknowledging cultural practices and meeting legal obligations.

Achievement standard

By the end of Year 8, students distinguish between different types of networks and defined purposes. They explain how text, image and audio data can be represented, secured and presented in digital systems.

Students plan and manage digital projects to create interactive information. They define and decompose problems in terms of functional requirements and constraints. Students design user experiences and algorithms incorporating branching and iterations, and test, modify and implement digital solutions. They evaluate information systems and their solutions in terms of meeting needs, innovation and sustainability. They analyze and evaluate data from a range of sources to model and create solutions. They use appropriate protocols when communicating and collaborating online.

Source: Australian Curriculum, Assessment and Reporting Authority (ACARA), *Australian Curriculum Digital Technologies for Foundation–10*, <http://www.australiancurriculum.edu.au/technologies/digital-technologies/curriculum/f-10?layout=1>

Term overview

Term 1	Term 2	Term 3	Term 4
<p>Computational thinking, Programming in Python, Control Structures, Game Design and Theory.</p> <p>At the AIC students develop an understanding of computational thinking and an introduction to computer-programming in Python. Students will unpack a beloved past time to see beyond the enjoyment factor to the underlying constructs and experiences which cause human enjoyment and interaction.</p> <p>We will ensure that the students at AIC are introduced to the internal, interrelating components of computer-based systems in a social and industrial context.</p> <p>AIC encourages students to examine a variety of systems, build on their design skills and gain an</p>	<p>Programming in Java</p> <p>At the AIC students are introduced to the core concepts of computer-programming in Java. They will learn to create apps and games in Java.</p> <p>Students at the AIC aim to develop and modify digital solutions by implementing instructions contained in algorithms through programs. They create programs based primarily on text based input and output.</p> <p>Students at the AIC will incorporate Calculations and Variables, If statements and Booleans, While Loops, For loops and Testing, String Functions, Functions, Math Object, Array and Bonus to complete challenges and projects.</p>	<p>Databases, Programming in Html – Developing Webpages with CSS</p> <p>At the AIC students are introduced to the core concepts of computer-programming in Html. They will develop an understanding of the language of web design in Html and CSS as well as the foundations of databases.</p> <p>Students will learn to describe the attributes of complex objects, for example defining the records, fields, formats and relationships of a simple dataset.</p> <p>Endeavour</p> <p>AIC endeavours to teach students to create a web-based project that involves modifying an existing</p>	<p>Digital Imaging</p> <p>AIC ensures that students gain problem-solving skills by identifying needs and opportunities for new and better solutions.</p> <p>Students at AIC are encouraged to use idea generation techniques to come up with creative and innovative outcomes. They will learn to prepare and implement time and action plans in design projects.</p> <p>AIC ensures that students learn to manage material, tools, techniques and evaluate the role of project management when developing the design project.</p> <p>AIC emphasises on experimentation to assess the suitability of design ideas, refine them to</p>

		<p>appreciation of how these concepts and technologies are used in industry.</p>		<p>website template or writing HTML and cascading style sheets (CSS), for example using web-authoring software and CSS to create a website that allows customers to interact with an enterprising solution.</p>	<p>address the needs and opportunities and optimise design solutions.</p> <p>Students will take into consideration sustainable materials, tools, techniques and design ideas to develop the design projects and demonstrate safe work practices.</p>
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Year 9 Digital Technologies

Year level description

Learning in Digital Technologies focuses on further developing understanding and skills in computational thinking such as precisely and accurately describing problems and the use of modular approaches to solutions. It also focuses on engaging students with specialised learning in preparation for vocational training or learning in the senior secondary years.

By the end of Year 9, students will have had opportunities to analyse problems and design, implement and evaluate a range of digital solutions, such as simulations.

In Year 9 students consider how human interaction with networked systems introduces complexities surrounding access to, and the security and privacy of, data of various types. They interrogate security practices and techniques used to compress data, and learn about the importance of separating content, presentation and behavioral elements for data integrity and maintenance purposes.

Students explore how bias can impact the results and value of data collection methods and they use structured data to analyze, visualize, model and evaluate objects and events.

They learn how to develop multilevel abstractions, identify standard elements such as searching and sorting in algorithms, and explore the trade-offs between the simplicity of a model and the faithfulness of its representation.

When defining problems students consider the functional and non-functional requirements of a solution through interacting with clients and regularly reviewing processes. They consolidate their algorithmic design skills to incorporate testing and review, and further develop their understanding of the user experience to incorporate a wider variety of user needs. Students develop modular solutions to complex problems using an object-oriented programming language where appropriate, and evaluate their solutions and existing information systems based on a broad set of criteria including connections to existing policies and their enterprise potential. They consider the privacy and security implications of how data are used and controlled, and suggest how policies and practices can be improved to ensure the sustainability and safety of information systems.

Students progressively become more skilled at identifying the steps involved in planning solutions and developing detailed plans that are mindful of risks and sustainability requirements. When creating solutions, both individually and collaboratively, students comply with legal obligations, particularly with respect to the ownership of information, and when creating interactive solutions for sharing in online environments.

Achievement standard

By the end of Year 9, 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.

Source: Australian Curriculum, Assessment and Reporting Authority (ACARA), *Australian Curriculum Digital Technologies for Foundation–10*, <http://www.australiancurriculum.edu.au/technologies/digital-technologies/curriculum/f-10?layout=1>

Term overview

Term 1	Term 2	Term 3	Term 4
<p>The World Wide Web</p> <p>AIC emphasises on teaching the fundamentals of world wide web. Students will discriminate between the various forms used for presenting information to suit a particular audience.</p> <p>Students at AIC will identify and discuss ways information can be presented and interpreted, noting bias, selection and emphasis in printed and non-printed texts.</p>	<p>Databases, Programming in Html – Developing Webpages Expert</p> <p>At the AIC students are introduced to the core concepts of computer-programming in Html. They will develop an understanding of the language of web design in Html and CSS as well as the foundations of databases.</p> <p>Students will learn to describe the attributes of complex objects, for example defining the records, fields, formats and relationships of a simple dataset.</p> <p>Endeavour</p>	<p>Programming in Java Advanced</p> <p>At the AIC students are introduced to the core concepts of computer-programming in Java. They will learn to create apps and games in Java.</p> <p>Students at the AIC aim to develop and modify digital solutions by implementing instructions contained in algorithms through programs. They create programs based primarily on text based input and output.</p>	<p>Digital Imaging</p> <p>AIC ensures that students gain problem-solving skills by identifying needs and opportunities for new and better solutions.</p> <p>Students at AIC are encouraged to use idea generation techniques to come up with creative and innovative outcomes. They will learn to prepare and implement time and action plans in design projects.</p> <p>AIC ensures that students learn to manage material, tools, techniques and evaluate the role</p>

		<p>AIC ensures that students question the validity of the data and accessibility of the information for a common user. AIC encourages students to operate complex software systems safely and responsibly for the benefit of their tasks.</p> <p>Students will record, assess and reflect on their own effectiveness and that of the processes and systems they use in designing a web page.</p>	<p>AIC endeavours to teach students to create a web-based project that involves modifying an existing website template or writing HTML and cascading style sheets (CSS), for example using web-authoring software and CSS to create a website that allows customers to interact with an enterprising solution.</p>	<p>Students at the AIC will incorporate Calculations and Variables, If statements and Booleans, While Loops, For loops and Testing, String Functions, Functions, Math Object, Array and Bonus to complete challenges and projects.</p>	<p>of project management when developing the design project.</p> <p>AIC emphasises on experimentation to assess the suitability of design ideas, refine them to address the needs and opportunities and optimise design solutions.</p> <p>Students will take into consideration sustainable materials, tools, techniques and design ideas to develop the design projects and demonstrate safe work practices.</p>
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Upper school

Students in upper school may choose one or more of the following:

APPLIED INFORMATION TECHNOLOGY

Unit 1 ATAR AIT

Unit 1 – Media information and communication technologies

This unit focuses on the use of digital technologies to create and manipulate digital media. Students use a range of applications to create visual and audio communications. They examine trends in digital media transmissions and implications arising from the use of these technologies.

Unit 2 ATAR AIT

Unit 2 – Digital technologies in business

This unit focuses on the skills, principles and practices associated with various types of documents and communications. Students identify the components and configuration of networks to meet the needs of a business. They design digital solutions for clients, being mindful of the various impacts of technologies within legal, ethical and social boundaries.

Prerequisites: At least High C in Digital Technologies Year 9 (60%)

The above units will lead to ATAR Units 3 & 4 in Y.12.

Unit 3 ATAR AIT

Unit 3 – Evolving digital technologies

This unit focuses on the use of applications to create, modify, manipulate, use and/or manage technologies. Students consider the nature and impact of technological change and the effect this has when creating products for a particular purpose and audience.

Unit 4 ATAR AIT

Unit 4 – Digital technologies within a global society

This unit focuses on the production of a digital solution for a particular client. Students undertake the management of data and develop an appreciation of the social, ethical and legal impacts of digital technologies within a global community. Students understand the social and legal implications, and the impact of its use in industry.

There are WACE exams for all ATAR Units

Prerequisites: For Unit 3 and 4: Pass grade in Applied Information Technology ATAR Unit 1 and 2 (50%)

COMPUTER SCIENCE

Unit 1 ATAR CSC

Unit 1 – Developing computer-based systems and producing spreadsheet and database solutions

The focus for this unit is developing computer-based systems and producing spreadsheet and database solutions. Students are introduced to the internal, interrelating components of computer-based systems in an industry context. They examine a variety of systems, build on their spreadsheet and database skills and gain an appreciation of how these concepts and technologies are used in industry.

Unit 2 ATAR CSC

Unit 2 – Developing computer-based systems solutions and communications

The focus for this unit is developing computer-based systems solutions and communications. Students are introduced to networking concepts, as applied to industry. Through the use of algorithms, students develop programming skills. They create solutions exploring the ethical, legal and societal implications of industry-based applications.

Unit 2 BCSC
The focus for this unit is developing database and communication systems solutions. Students are introduced to networking concepts, as applied to industry. They examine a variety of systems, build on database and internet skills and gain an appreciation of how databases and internet, and communication technologies are used in industry.

Prerequisites: At least High C in Digital Technologies Year 9 (60%)

Prerequisites: At least High C in Mathematics Year 10 (60%)

The above units lead to ATAR Units 3 & 4 Computer Science in Y12.

Unit 3 ATAR CSC

Unit 3 – Design and development of computer-based systems and database solutions

In this unit, students understand the design concepts and tools used to develop relational database systems. They consider the complex interactions between users, developers, the law, ethics and society when computer systems are used and developed.

Unit 4 ATAR CSC

Unit 4 – Design and development of communication systems and software solutions

In this unit, students gain the knowledge and skills to create software. They use algorithms and structured programming to design and implement software solutions for a range of problems

using the Software Development Cycle. Students examine attitudes and values that lead to the creation and use of computer-based systems and their effect on society. Students consider networks, communication systems, including security and protocols.

Prerequisites: For Unit 3 and 4: Pass grade in Computer Science ATAR Unit 1 and 2 (50%)

MATERIALS DESIGN AND TECHNOLOGY GENERAL

Unit 1

Students interact with a variety of items that have been specifically designed to meet certain needs. Students are introduced to the fundamentals of design. They learn to communicate various aspects of the technology process by constructing what they design.

Unit 2

Students interact with products designed for a specific market. They use a range of techniques to gather information about existing products and apply the fundamentals of design. Students learn to conceptualise and communicate their ideas and various aspects of the design process within the context of constructing what they design.

Unit 3

Students develop an understanding of the elements and fundamentals of design and consider human factors involved in the design, production and use of their projects. They develop creative thinking strategies and work on design projects within specified constraints. Students learn about the classification and properties of a variety of materials and make appropriate materials selection for design needs.

Unit 4

Students learn about the nature of designing for a client, target audience or market. Students apply an understanding of the elements and fundamentals of design and consider human factors involved in their design projects. Students learn about the nature, properties and environmental impacts related to a variety of materials and production techniques. They develop creative thinking strategies, work on design projects within specified constraints and consider the environmental impacts of recycling of materials.

Pre-requisites: Category 2 OLNA and competent in VET IT in Year 10

Have external set tasks from SCSA in Year 12

Applied Information Technology General course

Unit 1 – Personal communication

The focus of this unit is to enable students to use technology to meet personal needs. Students develop a range of skills that enable them to communicate using appropriate technologies and to gain knowledge that assists in communicating within a personal context.

Unit 2 – Working with others

The focus of this unit is to enable students to use a variety of technologies to investigate managing data, common software applications and wireless network components required to effectively operate within a small business environment. They examine the legal, ethical and social impacts of technology within society.

Unit 3 – Media information and communication technologies

The emphasis of this unit is on the use of digital technologies to create and manipulate digital media. Students use a range of applications to create visual and audio communications. They examine trends in digital media transmissions and implications arising from the use of these technologies.

Unit 4 – Digital technologies in business

The emphasis of this unit is on the skills, principles and practices associated with various types of documents and communications. Students identify the components and configuration of networks to meet the needs of a business. Students design digital solutions for clients, being mindful of the various impacts of technologies within legal, ethical and social boundaries.

Have External set tasks from SCSA in Year 12.

Pre-requisites: C in Year 10 Technologies