

Welcome to Digital Technology for 2011. Please note the change in name to Digital Technology from Computing. Recent huge changes in Information Technology have caused a number of new approaches to the way in which we process and communicate information digitally.

Approach to learning Digital Technology (Computing)

In recent years there has been a move away from learning how to use every tool in a computer application. Fifteen years ago a computer course would most often consist of learning all the tools in an application (program) such as Microsoft Word. There are now more and more applications available, with each being increasingly complex. Students are now being expected to use the computer (applications) to solve problems. The emphasis is upon learning what each application can do and briefly some of its main functions. The assumption is that if you need to understand more you will find out by using the help screen, reading a manual or by asking someone. The key today is the ability to use the most appropriate application to solve the particular problem you are wishing to solve. Appropriate means the most efficient and effective.

There is a high degree of planning now required as part of the technological problem solving process. In the classroom situation you will be taught some of the basics of applications to get you started. You will be expected to learn other parts yourself to solve your chosen or given problem. In the real world people now learn just sections of an application, when they want to solve a problem.

Please do not confuse Digital Technology with recreational computing. By recreational computing we mean such things as games and social networking applications such as Facebook. While they both use the same tool, their approaches are very different. It is common for students to be very good at recreational computing yet fail to grasp the other side of computing.

Key Competencies in Computing

During the course you are developing the following skills with the aim of being a life long learner.

- **Using Language, symbols, text** – applies to all practical tasks and skills required to complete them. For example: The language of computing and use of software and hardware. Knowledge and understanding of the development of computer based systems, their operations and functions. Communicating ideas and information. Using mathematical techniques.
- **Thinking** – applies to problem solving in a range of contexts and planning the execution of tasks. Skills in the critical evaluation of the appropriateness of computer software in a variety of contexts. Collecting, analysing and organizing information. Problem solving.

- **Managing Self** – applies to managing the course tasks and assessments, meeting deadlines, having all necessary gear to suit the work being done. Overcoming difficulties by using the online help first, then help from near neighbour then help from teacher.
- **Relating to others** – positive work relationship to teacher and other students. Knowledge and understanding of the ethics of current and emerging computer based technologies and their effects on society. Working with others.
- **Participating and Contributing** – attempt all work offered with a view to completing it to the standard required and take part positively in class discussions relating to the work..

Remembering that a computer is only a tool to complete tasks quickly and efficiently.

Course Objectives:

DIGITAL INFORMATION

- Demonstrate an understanding of the role of digital tools and systems for managing information.
- Be able to use digital tools to design and construct systems to manage information for a specific purpose.

DIGITALINFRASTRUCTURE

- Demonstrate an understanding of digital infrastructure: hardware, software, networks, and their components
- Be able to design, and evaluate the performance of, a digital infrastructure
- Be able to build, configure and maintain digital hardware and networks, including installing software

DIGITALMEDIA

- Demonstrate an understanding of the types of digital media, and how they are created.
- Be able to create and publish a quality digital media product using appropriate media tools

PROGRAMMING AND COMPUTER SCIENCE

- Demonstrate an understanding of concepts across Computer Science and Software Engineering
- Be able to understand, select and design data types, data structures, algorithms, and program structures
- for a program to meet specified requirements, and evaluate user interfaces
- Be able to read, understand, write, and debug software programs using an appropriate programming language, tools, and software development process

Assessment

The content you cover has to be assessed to

- a. establish your level of understanding
- b. give you a recognisable qualification that you can use to enable you to move on in the Education world or to gain employment.

Unit Standards and Achievement Standards.

Most students will undertake one or the other form of Assessment. There is a lot of debate as to which is the hardest and which is the most beneficial. As a rule of thumb – if planning to go to University then do achievement standards. Why? So as to gain merits and excellences. They are not harder than unit standards. The easy unit standards have nearly all been phased out. The last of them – Business word processing are due to lapse at the end of the year. Unfortunately they tended to give the subject a bad name for being oversimplified and also allowing students to collect large numbers of credits. Those days have gone. With the need for evidence of learning now a student can expect to have only 20 credits made available.

If doing Unit Standards - The Computing unit standards can be found in 14 different industry areas of the NCEA. Qualifications. The result is that there is a large number of them. You must also remember that Unit Standards require a 100% pass. It is not possible to just get “achieved”. In Industry the philosophy is that you can either do it or you can’t. Doing parts of it is not considered good enough.

If doing Achievements Standards – The key to these standards is the ability to follow the Technological Process and to clearly document evidence of each step you take.

All students must compile a portfolio (now called a report) of work for any Achievement Standards that they do.

National Certificate of Computing Level 2 Requirements (also a Level 3 available)

This is a very useful qualification to add to ones C.V. It can only be got by studying unit standards.

For students to be eligible for The National Certificate In Computing Level 2 they are required to have completed the following five aspects.

2780 3 credits Level 1 Describe and operate a personal computer system

2781 3 credits Level 2 Maintain and protect data (Yr 12 CoSc)

18 more Level 2 credits in Computing

5 more level 2 credits in Business Information Processing - either 107 or 111 or 12885 word processing.

14 more Level 2 credits from any subjects

For students to be eligible for The National Certificate In Computing Level 3 they are required to have completed the following five aspects.

- 2780 3 credits Level 1 Describe and operate a personal computer system
- 2781 3 credits Level 2 Maintain and protect data (Yr 12 CoSc)
- 20 more Level 3 credits in Computing
- 5 more level 3 credits in Business Information Processing - either 108 or 112 or 12886 word processing.
- 15 more Level 3 credits from any subjects

Having another go – further Reassessment Opportunities

Our policy is the following -

Under Unit Standards, you are entitled to re-sit your assessment activity providing you have made a good attempt the first time -ie. 95% of the assessment would need to be completed to qualify for this. If the teacher is concerned over your lack of understanding you will be required to sit another but similar assessment. Under Achievement Standards, you are not, entitled unless we choose to let you. Generally this would entail expanding upon one or more sections of your work.

If you wish to re-sit an assessment, you may be required to do so in your own time. Generally, if you don't ask for a resit, or if you don't turn up for it, you miss out.

Authenticity

We must be sure that the work is yours. This means you may fail to achieve if: you get help from your mates with assignments, and you don't have permission to do so. If your supervisor is not sure that the work is yours, they may ask you to demonstrate the required skill again before they will give you credit. In extreme cases, the work may not be accepted unless we are sure it is yours. Students may be asked to produce evidence that the work handed in is theirs. Having data files in their own data file, suitably labelled, is one way to do that.

All work must be your own. You must keep a copy of any work handed in own your data file. This may be called upon if there is any doubt as to the work is your own. Be careful who you share work with because it may lead to you receiving no credits. Students will be asked on several occasions to sign authenticity declarations when handing work in. On a number of occasions you will also be asked to hand in working drafts.

Dates

The details of your course will be – on a separate sheet, laid out as a year planner. It will show the topics, approximately when they will be done and the qualifications available ie. Standard name, number, level and the number of credits.

You will receive a year planner which will show you when each piece of assessment is due.

BACKUP ISSUES

Students are expected to save all work on the file server. If students wish to do so they can back up their work on CD / DVD. This can be arranged with the teacher and the students will have to pay for a CD /DVD.

Internet Use

Students can be given up to 50 mb. a day – Initially all will start with 10mb. Students whom misuse the privilege to use the Internet will have the access removed. Students will find that in any day, if they use too much, their download rate will be reduced to Dial up speed. (slow)

The College has been forced to implement a Policy of no tolerance to games. Issues came to a head towards the end of 2009 with students

- Placing pirated games on the College system.
- Loading games with all types of extra files onto the system
- Playing games when they should have been working.

Students found loading games onto their U drives or any part of the College system will have their log on accounts removed for a period of time. Remember that in many large businesses the act of loading any thing onto a company computer results in instant dismissal.

The College has concerns about the use of the Internet for Myspace and U tube. My Space has been used to bully younger students and U Tube uses up large amounts of the College bandwidth. While the College recognises that they are an important part of a students life, it is their life out of College. Only on rare occasions will permission be given to use these sites.

Visual Diary. (for Senior students)

It is strongly recommended that every student have a visual diary.- your teacher will show you copies of previous students work.

How do I use it?

Collect

- A major part of learning to design in any field is becoming aware of the world around you. You could collect existing design or printed material, snapshots of websites, photos, things from nature, illustrations... ..making notes about **everything** you put in!!!!!!! You teacher will explain annotated notes to you and how to do them.

Describe

- Describe things you see and hear, words can be just as important as images.

Anaylse

- Make notes what do you like or not like about the things you have collected.

Critique

- Re-design the collected items, critique them using design language, e.g. Alignment, balance, proportion, etc.

Thumbnails

- Draw sketches showing every influence at your different design stages and ideas. NEVER rub out any drawings because you no longer like it. They show your development or evolution of ideas.

Experiment

- You need to constantly experiment with techniques in your visual diary. E.g. colours, layout etc

We all know that a “picture is worth a thousand words” and a picture or illustration with some meaningful short comments is worth a million words!

You can collect stuff from Magazines, newspapers, scans, screenshots the net, you can put in dried leaves and pieces of material if they inspire you.

Other hints

- **Describe** what you think is important with sketches, screenshots, describe the sounds, the changes to a page (when things are interactive), sounds or music etc
- **Analyse** why something is cool, why it is interesting, who it will appeal to, why it is useful.
(use the word BECAUSE)
- **Critique**
Use the words you learn. Use words like proportion, weighting, alignment, contrast, eye-flow etc
- **Thumbnails** Keep a record of all your sketches and drawing, keep them!! Don't just start on the computer. Spend time away from the computer. Draw, colour-in, glue, paste
- **Experiment**
Play around learn things, even if you didn't use it in your final product put then in your visual diary.
- Start a resource **Folder**.
Not everything of interest needs to be printed, set up a resource folder and use legible names

Marking and Moderation.

Each assignment will have an associated marking schedule with it. If you feel that the marking hasn't been consistent then you will be given the opportunity to have it check marked by another member of the staff. Students have the right to appeal their mark but it must be done within 48 hours of receiving back from the teacher. Reassessment opportunities of all or part of a unit are at the discretion of the teacher. You may be required to resubmit the whole piece of work again or just sections. Work not seriously attempted cannot be resubmitted later. Units of work are held by the teacher, as a selection of them must be sent to Wellington to be compared with all other schools to ensure that the same standards are being met throughout New Zealand. Students who are absent must catch up in their own time.

Students are required to verify the sighting and acceptance of the grade awarded by signing the result slip attached to each internally assessed achievement assessment. These are to be retained by the College for record purposes. Students will also be asked to verify the final grades awarded that are submitted to N.Z.Q.A.

Student obligations

- To attend class.
- To keep up to date with the work.

Note – the new Technology courses put a lot more onus on the students to perform consistently. Students who fail to complete all parts of each Unit will find that they have failed the whole unit.

A.Galletly
HOD Digital Technology (Computing)