Years 7–10 Syllabus

Contents

Information and Software Technology
Years 7–10 Syllabus (2003)

Syllabus Outcomes

Objectives Students will develop:	Stage 4 Outcomes A student:		Stage 5 Outcomes A student:	
1 knowledge and understanding of a range of computer software and hardware	4.1.1	recognises and uses software programs that are suitable for specific tasks	5.1.1	selects and justifies the application of appropriate software programs to a range of tasks
	4.1.2	identifies and demonstrates appropriate use of a range of hardware	5.1.2	selects, maintains and appropriately uses hardware for a range of tasks
2 problem-solving and critical thinking skills in order to design and develop creative information and software technology solutions for a variety of real-world problems	4.2.1	identifies and uses problem-solving processes when creating solutions	5.2.1	describes and applies problem-solving processes when creating solutions
	4.2.2	designs, produces and evaluates appropriate solutions to a range of problems	5.2.2	designs, produces and evaluates appropriate solutions to a range of challenging problems
	4.2.3	justifies decisions made when creating information and software technology solutions	5.2.3	critically analyses decision-making processes in a range of information and software solutions
3 responsible and ethical attitudes related to the use of information and software technology	4.3.1	uses ethical practices when dealing with information and software technology	5.3.1	justifies responsible practices and ethical use of information and software technology
	4.3.2	describes ethical practices used when dealing with data and information	5.3.2	acquires and manipulates data and information in an ethical manner

4	knowledge and understanding of the effects of past, current and emerging information and software technologies on the individual and society	4.4.1 describes a range of past, current and emerging information and software technologies	5.4.1 analyses the effects of past, current and emerging information and software technologies on the individual and society

Objectives	Stage 4 Outcomes	Stage 5 Outcomes
Students will develop:	**A student:**	**A student:**
5 effective communication skills and collaborative work practices leading to information and software technology solutions for specific problems	4.5.1 identifies the benefits of collaborative work practices when completing a task 4.5.2 documents ideas and solutions for targeted audiences 4.5.3 identifies key roles and responsibilities of people in the field of information and software technology	5.5.1 applies collaborative work practices to complete tasks 5.5.2 communicates ideas, processes and solutions to a targeted audience 5.5.3 describes and compares key roles and responsibilities of people in the field of information and software technology

Activities

Stage 4 (Years 7-8) Activities

Activity 1: Laser Basics and Hardware Exploration

- Description: Introduce students to the principles of CO_2 lasers and explore various hardware components involved. Students will learn to identify and use different parts of a CO_2 laser system.
- Referenced Outcomes:
    - 4.1.2 - Identifies and demonstrates appropriate use of a range of hardware.
    - 4.4.1 - Describes a range of past, current, and emerging technologies.
- Skills Developed: Hardware identification, basic technological literacy.

Activity 2: Software for Laser Design

- Description: Students use specific software to design a simple project (like a nameplate) which they will then produce using a CO_2 laser cutter. This introduces them to practical applications of design software.
- Referenced Outcomes:
    - 4.1.1 - Recognises and uses software programs that are suitable for specific tasks.
- Skills Developed: Software operation, design skills.

Activity 3: Problem-Solving with Laser Technology

- Description: Students will be tasked to design and optimize a simple product, addressing a specific problem or need, using a CO_2 laser. This will involve iterative design, production, and evaluation.
- Referenced Outcomes:
    - 4.2.1 - Identifies and uses problem-solving processes when creating solutions.
    - 4.2.2 - Designs, produces, and evaluates appropriate solutions to a range of problems.
- Skills Developed: Problem-solving, critical thinking, product design.

Activity 4: Ethics in Technology

- Description: Through a guided discussion and research, students examine ethical considerations in the use of laser technology, such as privacy, safety, and environmental impact.
- Referenced Outcomes:
  - o 4.3.1 - Uses ethical practices when dealing with information and software technology.
  - o 4.3.2 - Describes ethical practices used when dealing with data and information.
- Skills Developed: Ethical reasoning, critical discussion.