Information and Software Technology

A Guide to the New Years 7–10 Syllabus

The new *Information and Software Technology Years 7–10 Syllabus* will replace the current *Computing Studies Years 7–10 Syllabus* and will be implemented in 2005 with Year 9 students and in 2006 with Year 10 students. Stage 4 outcomes have been provided for those schools that wish to implement the syllabus with Year 7 or Year 8 students concurrently with the Technology (Mandatory) Years 7–8 course.

The new syllabus is informed by contemporary research about how people learn and about how learning outcomes can be enhanced by teaching practice.

The syllabus promotes *assessment for learning* as an essential component of good teaching. It follows the broad directions established in the NSW Board of Studies *K–10 Curriculum Framework* and is part of a continuum of learning from Kindergarten to Year 12 that supports sustained, sequential, high quality learning.

What is similar?

Much of the content is similar to the current syllabus content. Students will continue to:

- develop knowledge, understanding and skills in manipulating hardware and software to solve real world problems
- include practical experiences relating to and enhancing computer related theory
- relate classroom experiences with computers to a wider societal context.

Current programs can be modified to meet the requirements of the new syllabus and many existing units of work will form the bases of effective programs. The majority of existing resources will continue to be relevant.

The recent experience teachers have gained in implementing the range of Stage 6 Technology syllabuses will assist in the implementation of the new *Information and Software Technology Years 7–10 Syllabus*.

What is different?

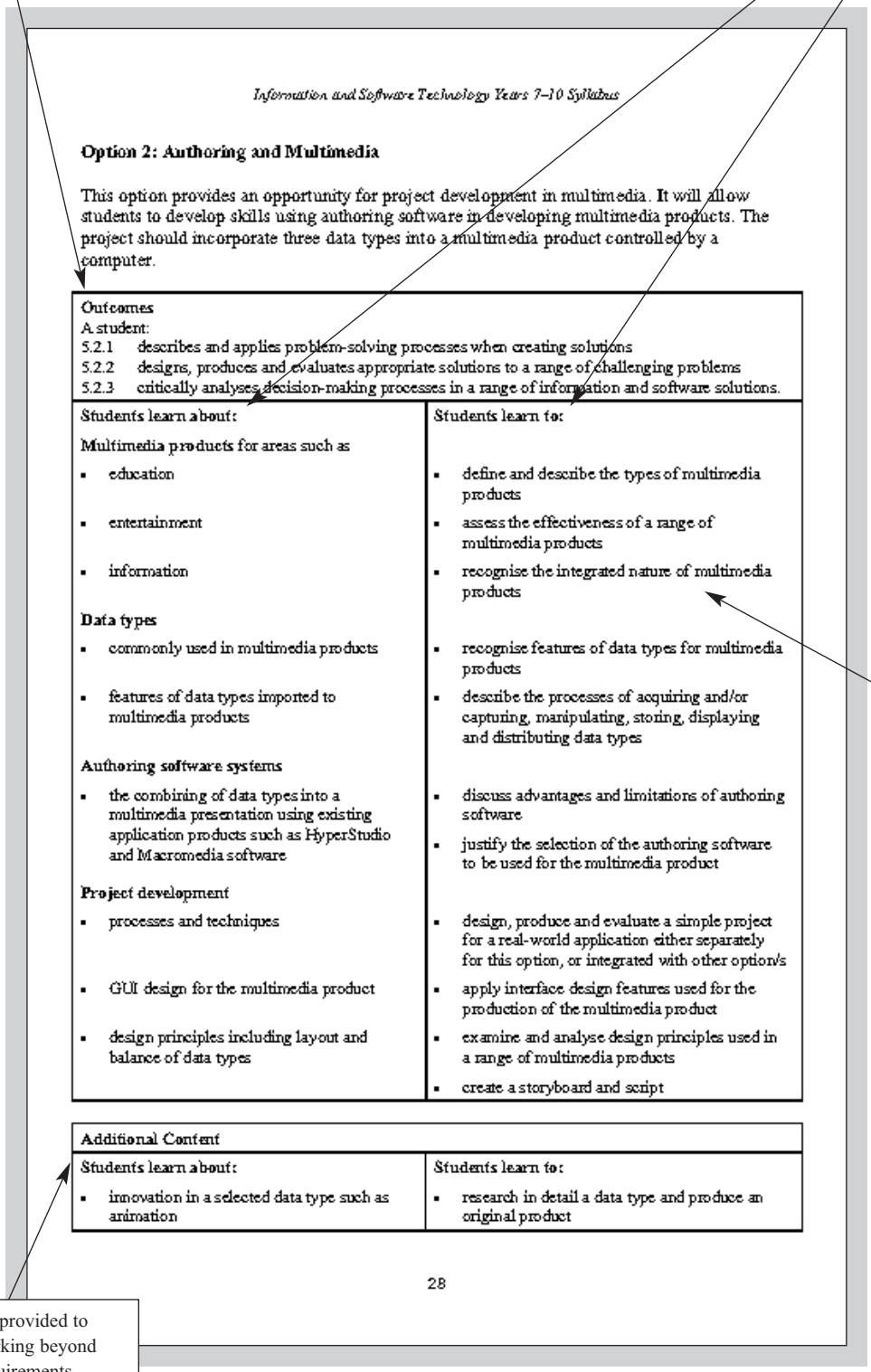
The new syllabus builds on the current syllabus in directions identified through research into the teaching of Technology-related subjects in other systems nationally and internationally, and through consultation at forums, meetings and during wide circulation of the draft syllabus.

- There is a greater emphasis on teaching and learning related to Occupational Health and Safety and equal opportunity.
- There is a significant reduction in the number of outcomes. This will simplify the process of programming, assessment and reporting.
- Opportunities for students to engage in the design, production and evaluation of work in projects are provided.
- A range of new areas of study encompass contemporary technologies and provide a foundation for students moving into a range of Stage 6 Technology-based electives.
- Teachers may choose areas of interest and explore them at a greater depth.
- There is an increased focus on the development and application of new and emerging technologies.
- Stage statements from Early Stage 1 to Stage 5 describe the continuum of learning in Information and Software Technology.
- Content additional to the essential syllabus content is included to help teachers address the needs and interests of students who have demonstrated Stage 5 outcomes in less than the indicative time.
- An overview statement is provided that shows how each cross-curriculum area is embedded in the essential content.

The features of the content pages

Outcomes and content are linked in tables to assist teachers with planning and programming.

Content is expressed as *Students learn about* and *Students learn to* in a consistent format.



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Option 2: Authoring and Multimedia

This option provides an opportunity for project development in multimedia. It will allow students to develop skills using authoring software in developing multimedia products. The project should incorporate three data types into a multimedia product controlled by a computer.

Outcomes
A student:
5.2.1 describes and applies problem-solving processes when creating solutions
5.2.2 designs, produces and evaluates appropriate solutions to a range of challenging problems
5.2.3 critically analyses decision-making processes in a range of information and software solutions.

Students learn about:	Students learn to:
Multimedia products for areas such as	
▪ education	▪ define and describe the types of multimedia products
▪ entertainment	▪ assess the effectiveness of a range of multimedia products
▪ information	▪ recognise the integrated nature of multimedia products
Data types	
▪ commonly used in multimedia products	▪ recognise features of data types for multimedia products
▪ features of data types imported to multimedia products	▪ describe the processes of acquiring and/or capturing, manipulating, storing, displaying and distributing data types
Authoring software systems	
▪ the combining of data types into a multimedia presentation using existing application products such as HyperStudio and Macromedia software	▪ discuss advantages and limitations of authoring software ▪ justify the selection of the authoring software to be used for the multimedia product
Project development	
▪ processes and techniques	▪ design, produce and evaluate a simple project for a real-world application either separately for this option, or integrated with other option/s
▪ GUI design for the multimedia product	▪ apply interface design features used for the production of the multimedia product
▪ design principles including layout and balance of data types	▪ examine and analyse design principles used in a range of multimedia products ▪ create a storyboard and script

Additional Content

Students learn about:	Students learn to:
▪ innovation in a selected data type such as animation	▪ research in detail a data type and produce an original product

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Cross-curriculum content is embedded in the syllabus content.

Additional content is provided to cater for students working beyond essential syllabus requirements.

- Content relating to the use and understanding of information and communication technologies (ICT) is incorporated in the syllabus content.
- Life Skills outcomes and content have been provided for those students with special education needs, particularly those students with an intellectual disability, for whom it has been determined that the outcomes and content found in sections 6 and 7 of the syllabus are not appropriate.
- Built into the syllabus is the concept that *assessment for learning* is integral to teaching and learning in a standards-referenced framework. *Assessment for learning* involves teachers planning how and when they will gather evidence of learning at the same time as they plan the work that students will do. It recognises the importance of assessment to student motivation and self-esteem, and promotes the active involvement of students in their own learning.

How can the syllabus be used to program?

The syllabus outcomes provide the focus for teaching and learning in Information and Software Technology. This syllabus encourages a model of programming that begins with outcomes, and is precise about what is being taught and what is being learnt. Developing integrated programs from the new *Information and Software Technology Years 7–10 Syllabus* involves:

- identifying the outcomes to be addressed (see syllabus pp 12–13)
- identifying the required evidence of learning
- planning explicit teaching and learning experiences to address the outcomes (see syllabus pp 18–42) to allow students to demonstrate evidence of learning
- identifying strategies to teach the content
- incorporating *assessment for learning* by using the assessment advice in the syllabus and in the support material that will be provided by the Board of Studies.

The advice about additional content on p 15 of the syllabus will assist teachers to develop programs for students who are demonstrating Stage 5 outcomes prior to the completion of Year 10.

Stage statements describe a continuum of learning from Early Stage 1 to Stage 5. This enables teachers to map students' learning development, and to plan and program work according to students' needs and abilities.

How does the syllabus cater for all students?

A key principle of the *K–10 Curriculum Framework*, which guides K–10 syllabus development, is that the curriculum must be inclusive of all students in New South Wales.

The rationale, aim, objectives, outcomes and content of the syllabus have been designed to accommodate teaching approaches that support the learning needs of all students.

Students with special education needs will participate fully in learning experiences and assessment activities. These students may require additional support in terms of modified tasks and varied learning approaches. There may also be occasions when different strategies need to be adopted to broaden and deepen the learning experiences of gifted and talented students.

Life Skills outcomes and content, using the rationale, aim and objectives of this syllabus, have been included in section 8. They will provide the basis for a program of study for the small percentage of students with special education needs for whom the outcomes and content in sections 6 and 7 of the *Information and Software Technology Years 7–10 Syllabus* are not appropriate.

What support is the Board providing to assist with initial implementation of the syllabus?

Following the release of the syllabus, support materials will be distributed to assist teachers in understanding the syllabus and its associated assessment requirements.

The first School Certificate credential based on the new syllabuses will be awarded in 2006. Specific advice about requirements for the School Certificate will be provided well in advance of 2006.

distributed with the syllabus	**Phase 1** ■ this guide to the new *Information and Software Technology Years 7–10 Syllabus* ■ draft Descriptions of Levels of Achievement
3 months after distribution of the syllabus	**Phase 2** ■ advice on programming ■ sample units of work ■ sample assessment activities
6 months after distribution of the syllabus	**Phase 3** (incorporates Phases 1 and 2) ■ annotated samples of student work
12 months after implementation of the syllabus	**Phase 4** ■ final Descriptions of Levels of Achievement

The Department of Education and Training, the Catholic Education Commission, other school systems, the Association of Independent Schools and professional associations will assist and support the ongoing implementation of the syllabus.