

Design and Technology



A Guide to the New Years 7–10 Syllabus

The new *Design and Technology Years 7–10 Syllabus* will replace the additional component in the current 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 Syllabus*.

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 content. Students will continue to:

- develop knowledge, understanding and skills relating to the use of materials, tools and techniques
- focus on the production of practical projects as the basis of their learning in Design and Technology
- engage in the design, production and evaluation of projects.

Current programs can be modified to meet the requirements of the new syllabus and some 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 (1999) will assist in the

implementation of the new *Design and 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.

- The new syllabus is an elective course and is no longer the foundation course for the Technological and Applied Studies Key Learning Area.
- There is a significant reduction in the number of objectives and outcomes. This will simplify the processes of programming, assessing and reporting.
- Teachers are required to develop units of work that integrate core content and project work during the study of a focus area.
- The new syllabus places a greater emphasis on practical skills development. Project work is the main learning activity engaged in by students during a unit of work.
- A range of new focus areas of design have been added to the syllabus to provide meaningful contexts for the study of design and to ensure breadth of study. Provision of a student-negotiated focus area of design allows students to negotiate a project of interest and to work independently.
- Stage statements from Early Stage 1 to Stage 5 describe the continuum of learning in Design and 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.

The features of the content pages

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

Design and Technology Years 7–10 Syllabus

Core: Activity of designers
 This area of core content examines the activities of designers over time and across a range of focus areas. The interrelationship of enterprising activity with innovation is explored to give insights into trends and preferred futures. Problem-solving techniques that are used by designers can be applied by students to their designed solutions. The impact of technologies is investigated and evaluated as they impact on individuals, society and environments.

<p>Outcomes A student:</p> <p>5.2.1 evaluates and explains the impact of past, current and emerging technologies on the individual, society and environments</p> <p>5.3.1 analyses the work and responsibilities of designers and the factors affecting their work</p> <p>5.3.2 evaluates designed solutions that consider preferred futures, the principles of appropriate technology and ethical and responsible design</p> <p>5.4.1 develops and evaluates innovative, enterprising and creative design ideas and solutions</p>			
<p>Students learn about:</p> <p>The work of past and current designers across a range of settings</p> <ul style="list-style-type: none"> • cultural • commercial • industrial • historical • contemporary, including Aboriginal and Torres Strait Islanders and other Indigenous peoples and the contributions of males and females to design industries • careers in design and manufacture <p>Trends in technology and design</p> <ul style="list-style-type: none"> • in history • across contemporary cultures <p>Creativity and problem-solving techniques used by designers</p> <ul style="list-style-type: none"> • needs and opportunities • strengths • threats <p>Impact of technologies on:</p> <ul style="list-style-type: none"> • the individual • society (different cultural groups, including Aboriginal and Torres Strait Islanders and other Indigenous peoples) • environments 	<p>Students learn to:</p> <ul style="list-style-type: none"> • examine and describe the work of past and current designers across a range of settings and from a range of focus areas of design • explore career opportunities and pathways in design and manufacture • recognise trends in technology and innovation • identify the history and diversity of past, current and emerging technologies and innovations across a range of focus areas • identify what changes would need to occur to achieve particular visions • assess the impact of past, current and emerging technologies and innovation on society and environments • demonstrate design ideas and solutions that are innovative and enterprising • evaluate and explain the impact of past, current and emerging technologies on the individual, society and environments 		
<p>Additional content</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px; vertical-align: top;"> <p>Students learn about:</p> <ul style="list-style-type: none"> • work of contemporary designers • preferred futures in design and technology </td> <td style="width: 50%; padding: 5px; vertical-align: top;"> <p>Students learn to:</p> <ul style="list-style-type: none"> • plan and prepare a word-processed report on non-traditional careers in design and technology • identify specific examples of preferred futures • predict future directions for a designed solution </td> </tr> </table>		<p>Students learn about:</p> <ul style="list-style-type: none"> • work of contemporary designers • preferred futures in design and technology 	<p>Students learn to:</p> <ul style="list-style-type: none"> • plan and prepare a word-processed report on non-traditional careers in design and technology • identify specific examples of preferred futures • predict future directions for a designed solution
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Outcomes and content are linked in tables to assist teachers with planning and programming.

Cross-curriculum content is embedded in syllabus content.

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

- An overview statement is provided that shows how each cross-curriculum area is embedded in the essential content.
- 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 Design and 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 *Design and 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 19–26) 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 page 14 in the syllabus will assist teachers to develop programs for students who are demonstrating Stage 5 outcomes prior to the completion of Year10.

Stage statements describe a continuum of learning from Early Stage 1 to Stage 5. This enables teachers to map students' learning development, and 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 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 *Design and 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 <ul style="list-style-type: none"> ■ this guide to the new <i>Design and Technology Years 7–10 Syllabus</i> ■ draft Descriptions of Levels of Achievement
3 months after distribution of the syllabus	Phase 2 <ul style="list-style-type: none"> ■ advice on programming ■ sample units of work ■ sample assessment activities
6 months after distribution of the syllabus	Phase 3 (incorporates Phases 1 and 2) <ul style="list-style-type: none"> ■ annotated samples of student work
12 months after implementation of the syllabus	Phase 4 <ul style="list-style-type: none"> ■ 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.
