An Introduction to Information Processes and Technology Stage 6 in the New HSC

The new Information Processes and Technology Stage 6 Syllabus, together with the Software Design and Development Stage 6 Syllabus replace the current syllabuses in Computing Studies (2 Unit General, 2/3 Unit Common, and 3 Unit). The new Information Processes and Technology Stage 6 Syllabus is for implementation with Year 11 in 2000 and will be first examined in 2001.

The syllabus provides information that was formerly available in the KLA handbook. This includes descriptions of course requirements, assessment weightings for internal and external examination and examination specifications.

What is similar?

While Information Processes and Technology has a new focus on information, processes, technology and people, much of the underlying content from the existing courses remains the same. The preliminary topic ‘Tools for Information Process’ covers computer hardware and software. Similar material is covered in the current Preliminary course and 2 Unit General course. ‘Computer-based Systems’ covered in the current 2/3 Unit Common course has some common content with ‘Planning, Design and Implementation’ in the Preliminary course and the HSC topic ‘Projects’ in Information Processes and Technology Syllabus. Core topics, ‘Information Systems and Databases’ and ‘Communication Systems’ in the new HSC course has some common content with database and communications topics in the current courses. Commonality also exists between ‘Decision Support Systems’ and ‘Applied Artificial Intelligence and Expert Systems’ in the 2/3 unit course; ‘Automated Manufacturing Systems’ and ‘Computer-Controlled Systems’ in the 2/3 unit course; and ‘Multimedia Systems’ and ‘Multimedia (Option Topic 7)’ in the 2/3 unit course.

What are the overall improvements?

Information Processes and Technology provides a framework for the analysis and development of information systems rather than focusing on skills in operating hardware and software. While not a business-computing course, the approach used is similar to that used for many tertiary management information systems courses.

The syllabus has been designed to remain relevant in a field that is rapidly changing. The content emphasises principles that underlie information processing rather than current trends. The web based course specifications document provides a mechanism to ensure the course remains up to date over time.
Social and ethical issues arising from the processing of information are specifically addressed in the first Preliminary course topic. Subsequent topics address relevant issues. Students gain knowledge about these issues and are encouraged to adopt social and ethical practices.

A substantial amount of indicative time has been allocated to project work in both the Preliminary and HSC courses. This is in recognition that project work is more than a demonstration of what students have learnt, it allows them to develop their technical, communication and management skills.

A team project is required in the Preliminary course and optional in the HSC course. Team projects allow students to develop interpersonal and communication skills in addition to technical skills. Experience at working in teams will prepare students for similar situations common beyond the HSC in this field.

The syllabus has been presented in a way that clearly explains what is to be taught and the level of detail required.

The following changes have been made in relation to particular sections of the syllabus

**Rationale, Aim and Objectives (pp 6, 8)**

The rationale provides a clear indication of the purpose of the Information Processes and Technology syllabus as an emerging area of study within the broad field of information technology and computing.

The aim now succinctly states the intention of the syllabus and places an increased emphasis on information systems in society through the use of information technology and information systems.

The objectives have been reduced to 7 statements that integrate the knowledge, skills and attitudes that are central to Information Processes and Technology Stage 6.

**Course structure (p 9)**

The overview of the course structure is described below:

<table>
<thead>
<tr>
<th>2 Unit Preliminary Course</th>
<th>2 Unit HSC Course</th>
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</thead>
<tbody>
<tr>
<td>Introduction to Information Skills and Systems (20%)</td>
<td>Project Work (20%)</td>
</tr>
<tr>
<td>Tools for Information Processes (40%)</td>
<td>Information Systems and Databases (20%)</td>
</tr>
<tr>
<td>Planning, Design and Implementation (20%)</td>
<td>Communication Systems (20%)</td>
</tr>
<tr>
<td>Personal and Group Systems and Projects (20%)</td>
<td>Option Strands (40%) Any TWO from:</td>
</tr>
<tr>
<td></td>
<td>• Transaction Processing Systems</td>
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<td></td>
<td>• Decision Support Systems</td>
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<td></td>
<td>• Automated manufacturing Systems</td>
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<td>• Multimedia Systems</td>
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</tbody>
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Outcomes (pp 11–12)

The stage 6 outcomes have been reduced in number, with outcomes for each of the Preliminary and HSC courses. These outcomes have been developed to facilitate outcomes based programming, assessment and reporting processes. The outcomes have clear links to the content of the syllabus.

Content (pp 14–59)

The scope and depth of course content has been made clear by the description of what ‘students learn about’ and what ‘students learn to’.

In the Preliminary course new areas of content are:

- information systems in context
- classification of information systems
- explanation of information processes
- the organisation of hardware, software, non computer and issues for each of the information processes
- planning, design and implementation of a system
- project work.

Content that has been removed from the Preliminary course includes:

- keyboard familiarisation
- fetch-execute cycle
- the necessity to study two computer-based systems in context
- algorithms.

In the HSC course new areas of content are:

- project work (not in 2/3 Unit Common but is in 2 Unit General)
- project management
- the Internet within Communications
- transaction processing.

Content that has been removed from the HSC course includes:

- skills in the use of applications software in isolation
- data integration
- algorithms
- computing technologies.

Course requirements (p 60)

The Preliminary course is organised around four topics: Introduction to Information Skills and Systems; Tools for Information Processes; Planning, Design and Implementation; Personal and Group Systems; and Projects. All topics and their related projects are based on the information processes and skills of collecting, organising, analysing, storing and retrieving, processing, transmitting/receiving and displaying.
The HSC course is organised around three core topics (60%): Project Work; Information Systems and Databases; and Communication Systems; together with four optional topics (40%).

Software and course specifications are prescribed for Information Processes and Technology Stage 6.

**Assessment (pp 62–69)**

The use of a range and balance of assessment tasks is encouraged. It is expected that the assessment tasks will not simply replicate the external examination. Internal assessment tasks should assess outcomes and course content.

**What will be needed to teach this subject?**

- *Information Processes and Technology Stage 6 Syllabus*
- Specimen examination and marking guidelines
- Software and course specifications are prescribed for Information Processes and Technology Stage 6. These are published on the Board’s web-site.

While programs will need to be revised to reflect new syllabus content and outcomes, aspects of current programs may be incorporated where appropriate.

Equipment, used in schools, that meets the requirements of the current syllabus should be adequate to meet the requirements of the new syllabus.

Current resources are appropriate for use with the new syllabuses although there may need to be some adjustment in the way teachers use them.

A further subject-specific document is being developed by the Board of Studies for distribution later in the year. This will assist teachers with the implementation of the revised syllabuses.

A list of a number of resources will be placed on the Board’s website, [http://www.boardofstudies.nsw.edu.au](http://www.boardofstudies.nsw.edu.au).

The Board of Studies will also provide assessment support materials, which will be generic across subjects.

Cross-sectoral professional development workshops (Department of Education and Training, Catholic Education Commission and members of the Association of Independent Schools) for Information Processes and Technology Stage 6 will be held. Venues and dates for these workshops have been published on the New HSC website — [http://www.newhsc.schools.nsw.edu.au](http://www.newhsc.schools.nsw.edu.au) — and distributed to schools. The materials from the workshops will be available on this website.

**CURRICULUM SUPPORT for Teaching in Technology and Applied Studies 7–12** — a publication distributed each term by the Department of Education and Training — will carry an HSC supplement.

**Assessment and Reporting Bulletin** — published each term as a joint venture of the Department of Education and Training, the Catholic Education Commission and the Association of Independent Schools — will build on principles outlined in Board of Studies newsletters and assessment support materials.