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Frequently asked questions

The following questions have been derived from the questions commonly asked by participants in the New HSC workshops during 1999. They will also be published on the New HSC web site.

www.newhsc.schoolsnsw.edu.au

Agriculture

What strategies could be used by agriculture teachers to successfully implement the optional components in the HSC course?

The optional components of the HSC course involve a student either undertaking a research project or studying two electives from a choice of six elective topics. The research project is submitted to the Board for external examination. The two elective topics are examined through a second written paper.

In many school situations some students in the same class may undertake the research project whilst others will choose to study two elective topics. To maximise student choice it will be important to introduce at the beginning of the Preliminary course the options that students will have in the HSC course.

This is particularly significant as the syllabus states that *students may commence the practical component of their research project at any time after the beginning of term 2 of the school year preceding their HSC year, providing the student's report (analysis and writing up of material) is substantially completed in the HSC Course* (page 39).

Where students are involved in different projects and elective topics in the same class, the teacher will need to act as a learning facilitator, negotiating approaches and content of learning on a one-to-one basis. Project management strategies, independent learning techniques and a focus on developing students' research skills will all enhance a teacher's ability to manage the classroom effectively.

Occupational health and safety is an issue for all teachers of agriculture, especially in the areas of tractor and chemical safety. How will the NSW Department of Education and Training deal with these issues?

The resource package, *Chemical Safety in Schools*, is currently being printed and is due in schools during Term 4. The package includes a workplace training module to address the *Occupational Health and Safety (Hazardous Substances) Regulation* 1996. Volume 2 provides specific information about chemicals and agriculture.

The Training and Development Directorate is currently investigating approaches to tractor safety and tractor training for agriculture teachers and school farm assistants. The NSW Association of Agriculture Teachers is working with the Department on this initiative.

What recognition of prior learning (RPL) can students gain from the agriculture course?

Students who are intending, after the HSC, to undertake further training in the primary industries area should be encouraged by their teachers to seek RPL for relevant components of their work. Depending on the approaches, examples and case studies chosen in the course, students may be able to achieve significant credit transfer by completing some of the competencies in components of the Australian Qualifications Framework (refer to page 31 of the syllabus). Projects, especially research projects, can be looked upon favourably by post-school institutions. Already there are many cases where projects have been used as evidence by students to gain advanced standing into courses.

Design and technology

Why is the Design and Technology syllabus the only technology syllabus that has outcomes aligned to specific content in the "learn about" and "learn to" columns?

The Design and Technology syllabus focuses on students learning about, and learning to use, a process of designing and producing. The content of the course is based on gaining an understanding of how others design and produce and also how students can

enhance their own ability to design. Depending on the design projects undertaken, some aspects of this process will be addressed in each design project, building increasing experience and understanding.

Across NSW, the design projects selected will vary significantly. To ensure maximum flexibility for schools in the choice of projects and to reflect the practical, action- and process-based nature of the subject, the content is aligned with the outcomes.

In the course structure diagram, why is designing and producing in the Preliminary course different from designing and producing in the HSC course?

The Office of the Board of Studies requires the content of the Preliminary and HSC courses of a syllabus to be discrete. The Design and Technology syllabus focuses on designing and producing, and aspects of content related to designing and producing had to be identified for each course. In the Preliminary course, students are introduced to elements of designing and producing through teaching and learning activities, including a minimum of two design projects. In the HSC course, students build on this study. Designing and producing is addressed through the major design project, the innovation case study and again through explicit, separate teaching and learning activities.

In the HSC course students are now required to undertake a case study of an innovation. What is innovation and how current should it be? Where can I find examples of recent innovation?

The Macquarie Dictionary defines innovation as, "something new or different introduced". The syllabus, however, does not define innovation, so a wide range of interpretations will be possible.

The syllabus does not specify how current the innovation should be. However, the intention is that the innovation should be contemporary and relevant to activities of designing and producing now, not in the past. Where possible, it may be beneficial for the students' study of innovation to relate to and enhance the major design project. This is not a requirement of the syllabus, however, and it may not be appropriate in all situations. Many innovations were first introduced decades ago, yet a new application or new marketing method makes them innovative now. Examples of recent innovation can be found through research. Television, newspapers, journals, textbooks, reference books, searches on the Internet and interviews with people in industry, will all provide opportunities for identifying relevant innovations.

Can I use the major design project as part of my internal assessment program for the HSC course?

When students undertake a major design project they complete an enormous diversity of activities, tasks and thinking. A very specific selection of this work is examined externally through the folio and project. The assessment program is intended to provide opportunities to assess, together with the examination, all aspects of the HSC course.

You can use the major design project in your internal HSC assessment program. However, you may not use the criteria used for the external assessment of the project. Identify tasks which contribute to the development of the major design project but are not explicitly evident and assessed in the examination of the major design project. An oral presentation during the ideas generation phase is an example of such a task.

Engineering Studies

How can I determine the depth of study in content?

The content in Engineering Studies is presented in a two-column format. The "learn about" column indicates the aspects of the topic to be covered and the "learn to" column indicates how the topic is to be studied. Collectively these two columns indicate the depth of study required.

What needs to be included in an engineering report? How long should it be?

The syllabus states (page 11) that an engineering report can be as simple as one page, developing into a more detailed report as students gain more experience. In all areas, the syllabus is explicit in what is required (e.g. Bio-Engineering, page 26 and Telecommunications, page 44). The support document for Engineering Studies published by the Office of the Board of Studies provides further advice in relation to this matter.

Why have equilibrium diagrams and cooling curves been left out of the revised syllabus?

The consultation phases of the syllabus development process indicated concerns at the extent of content in the draft stages. Consultation also indicated that

microconstituents can be taught without an understanding of equilibrium diagrams and cooling curves.

Does the school-based elective module in the Preliminary course have to come from the list on page 10 of the syllabus?

You may select an elective from this list or you may choose to develop a topic of local interest into a module.

Who is going to develop resources for the engineering focus modules Aeronautical, Bio-engineering and Telecommunications?

Many resources can be sourced from the Internet by searching in associated fields (e.g. in Bio-engineering, look for aids for the disabled). Telstra has a package for schools which may assist in the delivery of Telecommunications. Professional associations may develop resource packages. The Office of the Board of Studies is developing a support document for Engineering Studies. The Department of Education and Training is currently evaluating professional development needs in relation to implementation of the New HSC. An Engineering Studies node on NSW HSC On-Line will provide support for the HSC course.

Food Technology

What happened to "applications" from the current Food Technology syllabus?

The syllabus has been reorganised to emphasise the practical nature of the subject. The applications have been integrated into the content, and aspects of the existing applications are evident in the "learn to" content column.

Why has the core strand *Food Properties* been replaced with *Food Quality*?

Providing consumers with a safe and high quality food supply is an issue of great importance to the food industry. Consultation during the development and revision of the syllabus has ensured that current issues of significance to the industry such as these have been updated and strengthened in the syllabus.

Why has the option *Food Marketing* been removed?

The current syllabus contains significant levels of overlap, particularly in the two option strands, *Food Marketing* and *Food Product Development*. In the revision of the Food Technology syllabus, the writers consulted a number of academics and industry representatives in order to reconceptualise the content in this area. A new core strand has been developed entitled *Food Product Development*, which combines aspects of both existing option strands. Marketing is integrated into this strand and is also represented in other strands of the syllabus.

When programming units of work for food technology, can an integrated approach be taken, thereby allowing a teacher to combine different areas of study?

The Office of the Board of Studies does not specify how syllabuses should be programmed. This is a school-based decision, best based on local understanding of the students, teachers, facilities and other resources. The school must ensure that teaching and learning opportunities are provided for all outcomes and content specified by the syllabus. An integrated approach can be adopted when programming units of work. For example, in the Preliminary course a unit of work may be developed which includes aspects of *Food availability and selection*, *Food quality* and *Nutrition*.

What is meant by a "food situation" in outcome H5.1?

Outcome H5.1 is the design, make, appraise outcome in the HSC course. All technology subjects include this approach. The word "situation" has been used to indicate the breadth of contexts that it may apply to, that is, any situation concerning food. It is intended to be inclusive of the breadth of food issues and applications.

Will we have to adjust our marking of internal assessment tasks to use the performance bands?

There is no requirement to use performance bands in internal assessment programs. The language of the performance bands gives teachers a clearer picture of the intended standard of achievement at the end of the HSC course. The performance bands will be used by the Office of the Board of Studies to report achievement at the conclusion of the HSC course.

Are we still required to rank and gap students?

Yes. In the new HSC assessment program it is essential that the tasks implemented accurately rank student performance and that the marks allocated represent

the difference in student performance. Over a period of time the understanding by teachers of what standard each mark represents will develop.

Industrial Technology

To what extent should computing skills be demonstrated in the project planning folio?

The syllabus specifically refers to computing capabilities in both the Preliminary and HSC courses in *Section B: Design and Management*. The level of skills to be demonstrated in the planning folio should be sufficient to demonstrate appropriate competency for the information presented and the specific areas of study undertaken. Use of word processing for presentation purposes, the inclusion of a simple spreadsheet for calculations and the use of imported artwork or images would be features of a basic folio. For students who elect to study multimedia or graphics, it would be expected that the demonstrated skill levels for these specific computing applications be somewhat higher. Computer-aided design and desktop publishing software, along with digital imaging, are examples of skills and use of technology commensurate with the technology studied.

Is it enough to address an outcome once in my programming of Industrial Technology or should it be done a number of times in different units?

Teaching and learning programs must give students the opportunity to achieve all outcomes. Some outcomes are quite demanding and may need to be addressed more than once, whilst there are outcomes in which students will display proficiency more quickly. Teachers should remain flexible and responsive in implementing their teaching and learning programs. During the teaching of the course, more time or additional activities may need to be allocated to assist students to achieve some outcomes.

If a school offers more than one industry area or has more than one class of students, how will this influence the school-based assessment program?

The school-based assessment program must meet Board requirements as specified in documents, including the Syllabus and EARS document. The mark submitted to the Board for students undertaking Industrial Technology at the school, regardless of industry areas, must indicate their rank order and the relative differences between students in terms of their achievement.

Will changes to the syllabus require the purchase or upgrading of workshop equipment?

Existing resources in schools will be sufficient to introduce the revised Industrial Technology syllabus. Schools may choose to enhance or extend their resources, but teachers should consider the suitability of existing resources prior to offering new industry areas for the Industrial Technology syllabus.

Information Processes and Technology

What is the difference between Information Processes and Technology (IPT) and Software Design and Development (SDD)?

Information Processes and Technology focuses on students becoming confident, competent, discriminating and ethical users of information technologies and information processes.

Software Design and Development develops students' ability to solve problems through the design and development of software solutions.

Are there any exclusions between Information Processes and Technology, Software Design and Development and the VET course, Information Technology?

These courses are complementary and each has a clear and separate focus. There are no exclusions between Information Processes and Technology, Software Design and Development and the Information Technology VET course. A student could choose to study all three courses.

What is the difference between information systems and information processes?

Information systems support individuals or organisations in carrying out particular tasks. Information processes explain the interaction between participants, data/information and information technology (hardware and software) within the information system. The study of information systems would consider what the system is for, while studying information processes would consider how the system operates.

What is a definition for "prototyping" (page 32 of syllabus) in the context of project work?

The Preliminary course topic, *Planning, design and implementation*, describes the development of information systems following a traditional approach. The focus of this approach is to develop systems that meet clearly defined requirements.

The prototyping approach is used when it is difficult to define precisely the requirements of the system. A working model, the prototype, is built in order to understand the system. If it is decided to continue with the development of the system, the prototype may be further developed to form a solution, or the development approach may revert to a more traditional approach.

Project work in the HSC course is intended to give students the opportunity to plan, design and implement an information system. Prototyping is one approach that can be used, and students should experience it in this topic.

Social and ethical issues appear to be a large feature in both Information Processes and Technology and Software Design and Development. Is this the case, and if so, why?

Yes. The need for students to understand about social and ethical issues and to behave in a socially and ethically responsible manner was identified as an important issue in the HSC Subject Evaluation Report for Computing Studies. It was also identified as an area for explicit treatment during the evaluation of both the syllabus writing briefs and the draft syllabuses.

What further support will be provided for the implementation of this subject?

The Board of Studies support document will be available to schools later in 1999.

The NSW Department of Education and Training will provide support for the new syllabus through the development of a new HSC On-Line subject node. It will be available in Term 3, 2000.

The Computing Studies Teachers Association and the NSW Computer Education Group are also planning further support.

Software Design and Development

The internal assessment components in both the Preliminary and HSC courses include teamwork and communication. What sort of tasks can assess these components?

It is intended that, in the Preliminary course, students participate in a project which involves a group of students working together. This allows them to experience the process of creating a software solution, in preparation for the individual project in the HSC course, as well as providing opportunities for students to experience working as part of a team.

Group projects can be assessed in a variety of ways. However it is always essential that the roles and expectations of each group member are explicitly defined. Students should have a clear understanding of the marking criteria. For example students may be required to contribute specific modules towards the generation of a larger software solution.

In the HSC course, the documentation produced for the major project should communicate how the solution meets the user's needs at all stages in the development of the project. Regular communication with proposed users also facilitates feedback. Students can be assessed on their communication techniques in describing a proposed system.

Teams of students could develop a software solution where each team develops an individual module. Assessment could be based upon how well individual modules perform their tasks and how well modules link in with the rest of the solution, the latter requiring the teams to communicate with each other. Students could develop solutions that meet the needs of a third party. Students could be asked to present and demonstrate their solutions to an audience.

Which teaching and learning strategies can teachers use to support student project work?

Teachers can:

- break the project into parts and set students a number of important dates by which work towards the project must be completed
- structure opportunities for students to learn new concepts before they are required to use them in the project

- teach theory through the project, so that what is being required in the project is supported by formal lessons
- set the class the same project so that students can help each other
- allow students to develop their own project in an area of interest for them
- allow students to develop solutions that involve multimedia
- provide students with examples of other student projects, demonstrating the standard of project work, including documentation, that is expected of them
- provide students with clear criteria and a marking scale when the project is issued
- encourage students to program in a language they are familiar with
- regularly review students' work, algorithms, code and documentation.

Textiles and Design

In the supporting documentation for the major textiles project (MTP), what is the difference between the two criteria "Design inspiration" and "Visual design concept development"?

"Design inspiration" requires student to write about their design ideas, relate them to the selected focus area, justify particular creative or innovative design ideas or techniques and also to analyse and explain the historical, cultural or contemporary factors that have contributed to the design and manufacture of the MTP. The section on "Visual design concept development" requires students to illustrate or represent the concept of the textile item through techniques such as sketching, drawing, painting or rendering. These diagrams attempt to capture the mood and feeling of the intended textile item but do not represent the detail of the completed item. These illustrations should clearly indicate the link between inspiration and design. **They should include an analysis of functional and aesthetic aspects of the design**.

Is it possible to combine the two criteria "Design inspiration" and "Visual design concept development" for presentation in the supporting documentation for the MTP?

The order of presentation of the material within the supporting documentation for the MTP is flexible. Students must address all criteria and ensure that they are clearly labelled. Regardless of the approach taken in supporting documentation, it is important for students to ensure that examiners can easily identify how aspects of the criteria have been addressed.

In the "Visual design concept development" section, what level of expertise is expected of the students in their drawings and sketches? Similarly, in "Manufacturing specifications", should production drawings be industry-standard? What level of detail is required?

Industry practice provides a reference point for student work. However, these students are HSC students, not industry professionals. Standards for all work submitted will be appropriate to the level of HSC study. The support document for Textiles and Design provides samples of illustrations as a guideline.

In the folio for the major design project in Design and Technology, students have unlimited scope to present their ideas. Why are there paging restrictions on the supporting documentation in the major textiles project?

Textiles and Design and Design and Technology are two distinct subjects. The major textiles project is a vehicle for students to demonstrate their textiles knowledge and skills through the development of a specific textiles item. The supporting documentation does not record the process undertaken. Rather, it provides evidence of specific textiles abilities, such as concept and technical drawing, manufacturing and decision-making. The supporting documentation for the MTP requires students to develop skills in presenting their ideas and decisions in a succinct manner. Effective and concise presentation and communication are highly regarded in the textile industry.

Can a student elect to study both Textiles and Design and Design and Technology, completing two projects using textile mediums?

There are no exclusions between the two subjects, as they are distinct and unique. Design and Technology focuses on an understanding of designing and producing, whereas Textiles and Design focuses on an understanding of textiles. A student can elect to develop two separate projects using textiles as a medium, but can not use any part of a project for assessment in another subject.

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Stage 6 Special Program of Study

For students with special education needs

From 2001, HSC students with special education needs following a Special Program of Study (SPS) will be eligible for the award of the Higher School Certificate.

Special Program of Study courses

Students who meet the SPS eligibility requirements will be able to undertake Board-developed Life Skills courses, regular Board-developed courses and/or Board-endorsed courses.

Board-developed Life Skills will be 2 unit, 240-hour courses. The following courses have been endorsed and are currently being developed:

English Life Skills
Mathematics Life Skills
Personal Development, Health and Physical Education Life Skills
Citizenship and Society Life Skills
Science Life Skills
Creative Arts Life Skills
Technological and Applied Studies Life Skills
Workplace and Community-based Learning Life Skills.

Industry Curriculum Framework courses include

Tourism and Hospitality
Business Services (Administration)
Retail Operations
Primary Industries
Information Technology
Metal and Engineering
Construction.

Students entered for an SPS may undertake the Industry Curriculum Framework courses either:

- under regular course arrangements, or
- by units of competency selected through the individual transition planning process from a 240-hour course (for example, 7 units of competency rather than 12 units over 240 hours, including 70 hours of work placement).

Eligibility requirements

Students who meet the SPS eligibility requirements are students with disabilities in special schools, support classes or regular classes.

The eligibility requirements for the SPS are that:

- students generally will have completed at least 4 Life Skills courses for the School Certificate
- students' planning must be undertaken through an individual transition planning process
- under special circumstances students will be allowed access to Stage 6 Special Program of Study courses, e.g. if the student has:
  - a deteriorating condition;
  - undertaken regular syllabuses in Stage 6 but has experienced **significant** difficulty.

Decisions about whether to enrol students in Special Program of Study courses for Stage 6 will be made by the school. The principal will be required to certify on the Preliminary and HSC entry forms that individual transition planning for each student entering for Life Skills courses in Stage 6 has occurred.

Note: The majority of eligible students will have an intellectual disability.

Pattern of study

Students undertaking an SPS follow the same pattern of study requirements for the HSC as other students. These are a minimum of:

- at least 6 units of Board-developed courses
- at least 2 units of Board-developed English
- at least 3 courses of 2 unit value
- at least 4 subjects.

Please refer to the HSC Calendar of Events for the Special Program of Study Events in November and December. (http://www.newhsc.schools.nsw.edu.au)

Curriculum Support in 2000

Subscriptions

CURRICULUM SUPPORT is available free of charge to teachers in NSW government schools.

It is available on subscription to teachers in non-government schools, to libraries and to others.

See your principal for a copy of the flier with details of how to subscribe, subscription rates and an application form.

As subscriptions determine the number of copies printed, we would be grateful to receive your order and cheque no later than Friday 25 February, 2000.

Evaluation fax sheet

Fax back to: 9886 7571

Your views on this year's CURRICULUM SUPPORT (TAS)

We would appreciate your views on this year's four editions of **CURRICULUM SUPPORT** and, in particular, the HSC supplement.

Please take some time to complete this page and fax it back to us so we can plan for next year's **CURRICULUM SUPPORT**.

LOOKING BACK OVER 1999	Strongly agree	Agree	Disagree	Strongly disagree
CURRICULUM SUPPORT keeps me well informed about current developments in my area of teaching.				
CURRICULUM SUPPORT provides me with many useful and practical ideas for teaching in my area.				
The HSC supplement has been a useful source of information on resources and ideas to assist me to plan for new HSC courses next year.				
It is important that all teachers have a personal copy of **CURRICULUM SUPPORT** for their area of teaching.				

LOOKING FORWARD TO 2000	Strongly agree	Agree	Disagree	Strongly disagree
I would like to see **CURRICULUM SUPPORT** changed in terms of				
• layout				
• size				
• design				
• content				

I would like next year's **CURRICULUM SUPPORT** to address the following issues in my KLA/area of teaching (please specify):

I would like next year's HSC supplement to provide me with information and ideas on the following areas (please specify):

Other comments or suggestions: