

## **IPT HSC CHANGES SUMMARY**

This document aims to highlight recent changes made to the NSW Information Processes and Technology HSC syllabus. The original syllabus will be examined for the last time at the 2008 HSC and the revised syllabus will be examined from the 2009 HSC onwards. My recently released IPT HSC text covers both the existing and revised syllabus - the revisions are essentially clarification and additions to the existing syllabus. The only significant exception being the removal of systems flowcharts – although some examples of systems flowcharts remain within my new text.

This document aims to assist those schools using my IPT HSC text with 2008 HSC classes and also to assist as the revised syllabus is implemented in 2009. Please feel free to contact me directly with any questions.

Regards,



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## **BRIEF SUMMARY OF CHANGES**

### **Project Management (previously Project Work)**

The new topic includes detailed coverage of the SDLC, which has largely moved from the old Prelim course. A variety of new system development approaches have been added. Systems flowcharts have been removed.

### **Information Systems and Databases**

Minor changes to this topic – largely clarification of existing content. For instance, data dictionaries, types of relationships specified in more detail, QBE added and OLAP, OLTP added as current/emerging trends.

### **Communication Systems**

This topic has been substantially restructured to suit current technology and practice. In particular the introduction of the “framework” model which groups OSI layers into three levels and specifies particular protocols. The table below highlights additional content, which was not detailed in the old syllabus.

### **Transaction Processing Systems**

Minor clarification and updating to reflect current practice, for instance web-based and online TPS now specified. Transaction defined as a series of events that must all occur or all not occur. More detailed backup/recovery including transaction logs, mirroring and rollback.

### **Decision Support Systems**

Minor changes with addition of extra examples of DSSs, including data warehouse/mining, GDSS, GIS and OLAP.

### **Multimedia Systems**

Main changes involve addition of new hardware devices and specific file formats.

## DETAILED SUMMARY OF CHANGES

### Project Management (previously Project Work)

The new topic includes detailed coverage of the SDLC, which has largely moved from the old Prelim course. A variety of new system development approaches have been added. Systems flowcharts have been removed.

<i>Notes</i>	<i>2008 HSC</i>	<i>Existing Syllabus</i>	<i>2009+ HSC</i>	<i>Revised Syllabus</i>	<i>Davis IPT HSC Text</i>
Topic name changed	Project Work	P32	Project Management	P29	P3
Content moved from 8.4 Prelim to HSC		P31	The consequences for groups that fail to function as a team	P30	P12
New content			Appreciate the advantages of groups that function as a team		P12
Altered content. Project plans (or project management plans) are no longer mentioned.	Develop and apply a project management plan that incorporates communication strategies with participants in the process		Understand the communication skills required to manage a system development project		P5-14
Content moved from 8.3 Prelim to HSC. Listed tools no longer part of a project plan.		P27	Project management tools	P30	P14-17
Content moved from 8.3 Prelim to HSC.		P27	Approaches to identify problems with existing systems	P30	P26-33
Requirements prototype rather than prototype when Understanding the problem.	Prototypes, a working model... Create a prototype from...	P33	Requirements prototypes – a working model... Create a requirements prototype from...	P30	P33-35
Requirements report replaces user requirements report from 8.3 Prelim. Requirements report details altered.		P27	Requirements reports. Interpret a requirements report...	P30	P35-43
Content moved from 8.3 Prelim to HSC. Systems flowcharts removed.		P27	Diagrammatically represent existing systems using context diagrams and DFDs	P30	P32-33
Content deleted as steps are now included in the revised HSC syllabus	Apply steps in understanding the problem	P33			
Making decisions changed to planning.	Making decisions	P33	Planning	P31	P46
Feasibilities listed more succinctly rather than as a series of questions.	Is it..? Does it..? Can it...? Are there...?	P33	Economic, technical, operational, scheduling.	P31	P46-52
New content. Comparing system development approaches and deciding on a particular approach occurs as part of planning stage.			Choosing the appropriate development approaches – traditional, outsourcing, prototyping, customisation, participant, agile methods. Compare traditional, iterative and agile system development approaches.	P31	P53-59

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Content moved from 8.3 Prelim to HSC.		P27	Create Gantt charts... Investigate/research new information technologies...	P31	P59-61
Requirements report essentially replaces references to project plan with minor modifications. The requirements report is updated to reflect the chosen solution and selected development approach.	The project plan that...	P34	The requirements report that...	P31	P59-61
Minor name change. Designing solutions changed to simply designing.	Designing solutions	P34	Designing	P31	P64
Content moved from 8.3 Prelim to HSC.		P27	Clarifying with users the benefits of the new information system	P31	P64-81 (integrated)
Content moved from 8.3 Prelim to HSC and reference to information technology changed to information system.		P27	Designing the information system for ease of maintenance	P31	P64-81 (integrated)
New content based largely on existing 8.3 Prelim. Covered as system models, such as context diagrams, DFDs, decision trees/tables, data dictionaries and storyboards are created.		P27	Clarifying each of the relevant information processes within the system. Detailing the role of the participants, the data and the information technology used in the system.	P31	P64-81 (integrated)
Altered wording	Solutions based on the further development of prototypes already created	P34	Refining existing prototypes	P31	P79-80
Systems flowcharts removed and storyboards added.	Tools used in designing, including: context diagrams, DFDs, decision tables/trees, data dictionaries, systems flowcharts.	P34	Tools used in designing, including: context diagrams, DFDs, decision tables/trees, data dictionaries, storyboards.	P31	P65-74
Content moved from Designing to Implementing		P34	Acquiring information technology and making it operational	P32	P84
Methods of conversion specified in revised syllabus moved from 8.3 Prelim, including compare/contrast methods of conversion.		P28	- the method of conversion: parallel, direct, phased, pilot. Compare and contrast conversion methods.	P32	P85-87
Operational manual created as part of implementing.			The need for an operation manual detailing the procedures participants follow when using the new system	P32	P88
Volume and simulated test data added.	Testing and evaluating the solution with live test data.	P34	Testing and evaluating the solution with test data such as: volume, simulated and live data.	P32	P90-92

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Operational manual trialled and used as part of testing, evaluating and maintaining.	The operation manual detailing procedures participants follow when using the new system.	P34	Trialling and using the operation manual.	P32	P93-94
Objectives changed to system requirements	Checking to see if the original objectives have been achieved	P34	Checking to see that the original system requirements have been achieved	P32	P95-96
Content moved from 8.3 Prelim to HSC.		P28	Reviewing the effect on users...	P32	P96-98
Content moved from 8.3 Prelim to HSC.		P28	Modifying parts of the system...	P32	P98-99
Rewording to clarify content	Document the new system	P34	Update system documentation	P32	P98-99

### Information Systems and Databases

Minor changes to this topic – largely clarification of existing content. For instance, data dictionaries, types of relationships specified in more detail, QBE added and OLAP, OLTP added as current/emerging trends.

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Minor rewording	Examples of database information systems	P36	Database information systems	P34	P108-118
Relationship types added to revised syllabus.		P36	One to one, one to many, many to many	P35	P131-134
New content clarifying linking.			Linking tables using primary and foreign keys	P35	P131-136
Minor rewording	Views of the data for different purposes	P36	User views for different purposes	P35	P174, P203
Data dictionaries specified in more detail.	Data dictionaries to describe the characteristics of data including: size, type, purpose.	P37	Data dictionaries to describe the characteristics of data including: field name, data type, data format, field size, description, example..	P35	P120-124 (integrated)
Course specifications now detail normalisation and mention 3NF.	Normalising data to reduce data redundancy	P37	Normalising data to reduce data redundancy	P35	P139-149
Centralised databases added for clarity	Distributed databases	P37	Centralised and distributed databases	P36	P192-197
QBE added	Selecting data from a relational database using SQL commands	P37	Selecting data from a relational database using query by example (QBE) and SQL commands	P36	P178-189
OLAP and OLTP added as current/emerging trends.			Online Analytical Processing (OLAP) and Online Transaction Processing (OLTP).	P37 (course specs)	P224

## Communication Systems

This topic has been substantially restructured to suit current technology and practice. In particular the introduction of the “framework” model which groups OSI layers into three levels and specifies particular protocols. The table below highlights additional content, which was not detailed in the old syllabus.

<i>Notes</i>	<i>2009+ HSC</i>	<i>Revised Syllabus</i>	<i>Davis IPT HSC Text</i>
Framework detailing three protocol levels added to revised syllabus. This is the basis of the revised communication systems topic.	The framework in which communication systems function, demonstrated by the following model...	P39	P229-232
Detail of the passing of messages from source to destination	The functions performed within the communication system in passing messages between source and destination...	P39	P232-237
Functions of protocols at different levels	Functions performed by protocols at different levels	P39	P231-232
Protocols specified at application level	Application level protocols: HTTP, SMTP, SSL	P40	HTTP P238-239 SMTP P284-290 SSL P298
Protocols specified at communication, control and addressing level	Communication, control and addressing level protocols: TCP, IP	P40	TCP P239-241 IP P241-243
Protocols specified at Transmission level	Transmission level protocols: Ethernet, Token Ring	P40	Ethernet P243-244, P307, P311-313, P316 Token Ring P309, P314-316
Thin and fat clients	Thin clients and fat clients	P39	P306
VoIP added as an example messaging system	VoIP	P40 (course specs)	P282-284
Hybrid topology added	hybrid	P40	P309-310
Wireless networks added to topologies	Wireless networks	P40	P308, P313
New hardware components added, namely modems, bridges, gateways, NICs, mobile phones, WAPs, Bluetooth devices.	The functions performed by the following hardware components used in communication systems: (see course specs)	P41	Bluetooth P334 Mobile phones P335 Others P339-346
Extranets added	The similarities and differences between the Internet, intranets and extranets. Compare and contrast the Internet, intranets and extranets.	P41	P260-261
General categories of issues replace more specific dot points	Issues related to...	P42	P355-358
Current and emerging trends added to course specifications	Blogs, wikis, RSS feeds, podcasts, online radio/TV, Video on demand, 3G technologies for mobile communication.	P42 (course specs)	P359-360

### Transaction Processing Systems

Minor clarification and updating to reflect current practice, for instance web-based and online TPS now specified. Transaction defined as a series of events that must all occur or all not occur. More detailed backup/recovery including transaction logs, mirroring and rollback.

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Transaction defined			A transaction – a series of events important to an organisation that involve a request, an acknowledgement, an action and an outcome	P44	P365
Components of TPS reflect general model of information systems rather than the old (and incorrect) users, participants and people from the environment.	The components of a transaction processing system including: users..., participants..., people from the environment....	P45	The components of a transaction processing system, including: purpose, data, information technology, processes, participants.	P44	P371-375
Specific examples not specified, but some are mentioned.	Example of real time... Examples of batch...	P45	Types of transaction processing systems: web-based, non web-based, online real time, batch, systems that appear real time....	P44	P381-412
Backup and recovery expanded significantly. Now includes full and partial backup, transaction logs, documenting backup and recovery procedures, mirroring, rollback.	Backup procedures, including...	P46	Data backup and recovery...	P45	P414-423
Rewording of updating in batch systems to generalise and encompass current practice.	Updating in batch...	P46	Updating in batch systems...	P45	P400-412
Rewording of updating in on-line real time systems to generalise and encompass current practice.	Updating in real time...	P46	Updating in on-line real time systems...	P45	P381-398
Specified collecting hardware changed	Hardware, including: MICR for reading cheques, ATM, barcode readers.	P47	Hardware, including: ATM, barcode readers, RFID tags.	P46 (course specs)	P425-428 RFID P394-395
Data warehouse, data mining, enterprise systems added to systems that analyse TPS data.	Analysing data, output from transaction processing is input to different types of information systems, such as: decision support, management information systems	P47	Analysing data, output from transaction processing is input to different types of information systems, such as: decision support, management information systems, data warehousing (for data mining), enterprise systems.	P46	P435-439
Data quality added to issues and data accuracy has been removed.	The importance of data in transaction processing, including: data security, data accuracy, data integrity.	P47	The importance of data in transaction processing, including: data security, data integrity, data quality.	P46	P443-444

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Current and emerging trends added			Current and emerging trends in transaction processing: data warehousing and data mining, Online Analytical Processing (OLAP) and Online Transaction Processing (OLTP).	P46 (course specs)	P224 (Ch2) P472-475 (Ch 5)

### Decision Support Systems

Minor changes with addition of extra examples of DSSs, including data warehouse/mining, GDSS, GIS and OLAP.

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New examples added including data warehouse, GDSS, GIS and MIS. Note that data warehouses and MISs assist decision-making but are not generally classified as decision support systems.	Types of decision support systems, including: spreadsheets, databases, expert systems, neural networks.	P49	The use of systems to support decision making, including: spreadsheets, databases, expert systems, neural networks, data warehouses, group decision support systems, Geographic Information System (GIS), Management Information System (MIS).	P48	P465-479
Note that DSSs access data within data warehouses and created by OLTP systems.	The emerging trend of group decision support and the communication it facilitates.	P51	Current and emerging trends of decision support systems: data warehousing and data mining, Online Analytical Processing (OLAP) and Online Transaction Processing (OLTP).	P50 (course specs)	P468-476



## Multimedia Systems

Main changes involve addition of new hardware devices and specific file formats.

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Further detail on differences between multimedia and print media.	The differences between print and multimedia, including: different modes of display, interactivity and involvement of participants in multimedia systems.	P56	The differences between print and multimedia, including: different modes of display, interactivity and involvement of participants in multimedia systems, ease of distribution, authority of document.	P55	P586 and integrated throughout chapter.
Tweening now specified	Animation processing	P57	Animation processing, including tweening.	P56	P557-558
Advances in technology updated to reflect current situation and encompass a broader range of technologies.	Advances in technology which are influencing multimedia development such as: World Wide Web and communication speed and capacity, CD-ROM speed, Digital Video Disc.	P57	Advances in technology which are influencing multimedia development, such as: increased storage capacity allowing multimedia products to be stored at high resolutions, improved bandwidth allowing transmission of higher quality multimedia, improved resolution of capturing devices, increases in processing power of CPUs, improved resolution of displays, new codecs for handling compression of media while improving quality.	P56 (Course specs)	Integrated throughout the chapter.
Plasma screens and DVD now specified.	Hardware for creating and displaying multimedia, including: screens: CRT displays, LCD displays, touch screens, projection devices, speakers, sound systems, CD-ROM, video, head-up displays and head-sets.	P58	Hardware for creating and displaying multimedia, including: screens including CRT displays, LCD displays, Plasma displays and touch screens. Digital projection devices. Speakers, sound systems. CD, DVD and Video tape players. Head-up displays and head-sets	P58 (course specs)	P565-581
Video processing software added.	Software for creating....	P58	Software for creating..., including... software for video processing...	P57	P561-563 P631
File formats specified.	The different file formats used to store different types of data.	P58	The different file formats used to store different types of data including: JPEG, GIF, PNG and BMP for images MPG, QuickTime, AVI and WMV for video and animation MP3, WAV, WMA and MID for audio. SWF for animation.	P57 (course specs)	General properties P626-631 Specifics integrated throughout.
Virtual worlds added as a current/emerging trend			Current and emerging trends in multimedia systems, such as: virtual worlds.	P57 (course specs)	P641