05 July 2005

To: SQA Co-ordinator
LEA
Directors of Education
Customer Accounts Managers
All Centres

For the attention of all staff responsible for the delivery of National Qualifications in Computing and Information Systems

Action by Recipient	
	Response required
	Note and pass on
✓	None — update/information only

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Dear Colleague

Computing and Information Systems — Update

The contents of this letter should be passed to the member of staff responsible for Computing and Information Systems.

This letter is intended to provide centres with information on developments in National Qualifications in Computing and Information Systems.

Errors in Arrangements Documents

Advanced Higher Computing Software Development

The statement which details the sort algorithms should read:

'Simple description and comparison of sort algorithms for:
1. Selection sort using 2 lists
2. Simple sort
3. Bubble sort

In terms of number of comparisons and use of memory.'

As sort names are often used differently, the algorithms are detailed in Appendix 1 to this letter.

Intermediate 2 and Higher Information Systems

The Intermediate 2 Information Systems Arrangements Document contains the following statement:

> 'Entities and Data Relationships
>
> Description and exemplification of simple data entities, in terms of the following attributes:
> name, multi-valued or single valued, data type (text, integer, real, object, date, time).'

A similar statement exists in the Higher document.

The word attribute is being used here in a generic sense rather in the relational database sense. A better wording for Intermediate 2 would be:

> 'Entities and Data Relationships
>
> Description and exemplification of simple data entities, in terms of:
> Entity name, multi-valued or single valued attributes, attribute data types (text, integer, real, object, date, time).'

This wording conveys the meaning of the writers in a clearer way.

All Computing and Computing Studies Arrangements documents are being checked for typing and consistency errors. New editions will be published when this is complete. More details will follow at that time.

NQ Review — Core Skills

The reviewed NQ Courses in Computing and Information Systems may not hold the same Core Skills as the old Courses. This is particularly important if the Courses are being used to contribute to a Scottish Group Award.

Appendix 2 contains details of the Core Skills held by each Course.

Standard Grade Computing Studies

Projects

The following projects are now available for download:

> Company Logo, Concert Tickets, Cost-a-kitchen, Dental Surgery, Digital Imaging, Fan Letter, Farm Shop, Giving Blood, Meal Planner, Multimedia, Munros, Point Of Sale, Sports Tables, Tasty Treats, Travel Agency

Paragraph 5 1 4 of the Arrangements document states: 'The project specifications and marking schemes should not be seen as inviolable: if necessary, they can be amended by the teacher to suit local circumstances with assessable tasks being added or deleted and corresponding changes made to the marking scheme.' However, care must be taken to ensure that any changes do not alter the level of complexity of the task to the extent that it is rendered invalid at the submitted level. It is hoped that the choice of projects available will enable centres to select a project which can be used unaltered.

Specimen Questions

A selection of sample questions based on the new Course content is also now available for download.

Intermediate 1 Computing Studies, Intermediate 2 and Higher Computing

The 'old' Courses *C017, C016* will **not** be available from session 2005/2006.

Transition arrangements will be in place for 're-sit' candidates. However, it should be noted that the new Units provide the best preparation for the new courses and all new candidates should be entered for the new Units. (Please refer to previous update letters if you are unsure about the new Course frameworks or transition arrangements.)

Advanced Higher Computing

The new *C206 13 Advanced Higher Computing Course* commences in session 2005/2006. The old Course *C017 13* will **not** be available in session 2005/2006.

The structure of the new Course is detailed below:

Advanced Higher Computing	**C206 13**
Units	
Mandatory	
Software Development	DF2Y 13
Developing a Software Solution	DM43 13
Optional	
Artificial Intelligence	DF31 13
Computer Architecture	DM44 13
Computer Networking	DF30 13
Coursework	
Coursework Project, marked out of 80, mark submitted unscaled.	

Transition arrangements will be in place for 're-sit' candidates but, again, it should be noted that the new Units give the best preparation for the new Course and all new candidates should be entered for the new Units.

The new Arrangements document and Specimen Question Paper are now on SQA's website. The new Coursework Project pack and NABs for *Developing a Software Solution, Computer Architecture* and *Computer Networking* are also now available for download.

Intermediate 2 and Higher Information Systems

The new *C216 11 and C216 12 Information Systems Courses* commence in session 2005/2006. The old Courses (C054 11 and C054 12) will **not** be available in session 2005/2006.

The structures of the new courses are detailed overleaf:

Intermediate 2 Information Systems	**C216 11**
Units	
Mandatory	
Using Information	DM4C 11
Database Systems	DM4A 11
Optional	
Applied Multimedia	DM4D 11
The Internet	DM4F 11
Expert Systems	DM4H 11
Coursework	
Coursework Task issued annually, marked out of 30, mark submitted unscaled.	

Higher Information Systems	**C216 12**
Units	
Mandatory	
Using Information	DM4C 12
Relational Database Systems	DM4K 12
Optional	
Applied Multimedia	DM4D 12
The Internet	DM4F 12
Expert Systems	DM4H 12
Coursework	
Coursework Task issued annually, marked out of 60, mark submitted unscaled.	

It should be noted that Database Systems at Intermediate 2 and Relational Database Systems at Higher are in a hierarchy even though the Unit codes are different. This means that a pass in Higher Relational Database Systems would count as a pass in Intermediate 2 Database Systems if a candidate were to change level.

The Course Arrangements documents and Course Assessment packs (containing the Specimen Question Papers and Specimen Coursework Tasks) for the new Courses are on SQA's website (**www.sqa.org.uk**). NAB assessment packs for each Unit are also available for download.

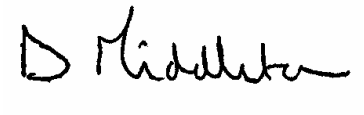
Advanced Higher Information Systems

The existing Course (C054 13) will **continue** in session 2005/2006.

A new Advanced Higher Course will start in session 2006/2007. The Course Arrangements Document for the new Course will be available soon.

I hope that you have found the information in this letter helpful. If you require further clarification please do not hesitate to contact me.

Yours sincerely



Derek Middleton
Qualifications Manager
Computing and Technical Education

Appendix 1 — AH Software Development Sort Algorithms

Arrangements will be amended to read:

‘Simple description and comparison of sort algorithms for:
4. Selection sort using 2 lists
5. Simple sort
6. Bubble sort

In terms of number of comparisons and use of memory.’

The following appendix to be added to the support notes:

The three sort algorithms required for this Unit are as follows:

Selection sort using 2 lists
Set up new empty list.
For number of items in list
  Find max in unsorted list
 Transfer it to first empty element of new list
 Replace with dummy data in old list
Next

Simple sort
Start with item 1
If item 2 > item 1, swap
If item 3 > item 1, swap
And so on to end of list
Repeat process with item 2
And so on to end of list

Bubble sort
Start with item 1
If item 2 > item 1, swap
If item 3 > item 2, swap
And so on to end of list
Repeat process until no more swaps

Animation web site
Animations of the simple sort and bubble sort can be found at
http://www.cs.brockport.edu/cs/javasort.html

Appendix 2 — Summary of changes to Core Skills for Computing/Information Systems at Intermediate 2 and Higher.

As you'll be aware, from session 2005/06 onwards, the 'old' *Computing and Information Systems Courses C017, C054* at Intermediate 2 and Higher will no longer be available and the 'new' Courses *C206, C216* will be in place.

The 'old' Courses also feature in the Scottish Group Award — G5A6 Computing and Information Technology at Intermediate 2. The 'new' Courses will continue to contribute towards this Scottish Group Award.

However, the Core Skills profiles of the 'new' Courses are somewhat different to that of the 'old'.

	Core Skills in 'Old' Course	**Core Skills in 'New' Course**
Computing Int2	*Full* — Problem Solving @ Int2 *Full* — IT @ Int2	*Full* — IT @ Int2 *Component* — Planning & Organising @ Int2 *Component* — Critical Thinking @ Int2
Computing Higher	*Full* — Problem Solving @ Higher *Full* — IT @ Higher	*Full* — IT @ Higher
Information Systems Int2	*Full* — IT @ Int2 *Component* — Planning & Organising @ Int2 *Component* — Critical Thinking @ Int2	*Full* — IT @ Int2 *Component* — Planning & Organising @ Int2 *Component* — Critical Thinking @ Int2
Information Systems Higher	*Full* — IT @ Higher (relative to optional Unit chosen) *Component* — Planning & Organising @ Higher *Component* — Critical Thinking @ Higher	*Full* — IT @ Higher *Component* — Planning & Organising @ Higher *Component* — Critical Thinking @ Higher

As you will see, the 'new' Computing Courses no longer hold the full Problem Solving Core Skill and, as this is required to complete the Scottish Group Award, another Course/Unit will need to be undertaken if the candidates do not already hold this Core Skill.

Here are the Core Skill requirements for the Scottish Group Award at Higher and Intermediate 2

G5A6 11 Computing and Information Technology, Int2	**G5A6 12 Computing and Information Technology, Higher**
Full — Communication @ Int1	*Full* — Communication @ Int2
Full — Numeracy @ Int1	*Full* — Numeracy @ Int2
Full — IT @ Int2	*Full* — IT @ Higher
Full — Problem Solving @ Int2	*Full* — Problem Solving @ Higher
Full — Working With Others @ Int1	*Full* — Working With Others @ Int2