

Our ref: RG/NQ

27 November 2002

**To SQA Co-ordinator**

For the attention of **all** staff responsible  
for the delivery of Technical Education subjects.

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**Technical Education – Autumn 2002 Update**

This is to update you on current developments in the Technical Education subjects, ie Craft & Design, Graphic Communication, Practical Craft Skills and Technological Studies. The following advice covers **all** of the Technical Education subjects.

**• NQ Review**

As part of the NQ review, details of reduced unit assessment requirements for Craft & Design, Graphic Communication and Technological Studies NABs were circulated at the start of the session. Advice on changes to Craft & Design, Intermediate 2 and Higher Design Assignment (ie given topics/removal of Product Model link) have also been circulated and are on the SQA website.

The aim of the NQ Review is to reduce the volume and complexity of assessment, not the level or ways in which a course can be taught. Furthermore, unit assessments can still be conducted (under controlled conditions) where evidence requirements have been removed from a NAB. This evidence can be used for Estimate and Appeals purposes, and indeed may well produce a better body of evidence for Appeals (especially for the design activities of Craft and Design).

**• SQA Website**

Our website ([www.sqa.org.uk](http://www.sqa.org.uk)) has been revamped and each subject now has its own subject page (termed a 'subject bin' in web speak). 'Subject bins' can be quickly accessed from the SQA homepage by selecting the 'NQ' header in QUALIFICATIONS (bottom left hand column) and then 'select a subject' on the NQ home page.

Each subject page allows access to Arrangement Documents, Specimen Papers, assessment guidance documents and NQ Review information. There are also links to examination Diet 2002 Principal Assessor and Senior Moderator Reports.

The SQA home page also has access to a teacher's home page ('SQA FASTTRACK', select 'teacher'), a NQ Review home page ('Jump to', select 'National Qualifications NQ) and a NQ home page (link as above). The SQA home page also has other useful internal (eg Diet 2003 Examination Timetable) and external (eg school websites) links.

- **Smart Groups**

Please be advised that the SQA website ([www.sqa.org.uk](http://www.sqa.org.uk)) is the definitive source of information for SQA Arrangements, advice and information. Smart Groups are not officially endorsed by SQA and the information given, views expressed and discussion items on these sites are those of the members of the group and are not verified by SQA.

Informal internet based 'Smart Groups' have now been set up for the following areas:

- Craft and Design Advanced Higher
- Craft and Design Higher and Intermediate 2
- Graphic Communication.

If you would like more information on Smart Groups please e-mail Grant Woollard ([grant.woollard@sqa.org.uk](mailto:grant.woollard@sqa.org.uk)) for Craft and Design and Mark Hood ([mark.hood@sqa.org.uk](mailto:mark.hood@sqa.org.uk)) for Graphic Communication.

- **Estimates & Appeals**

*'Estimates and Assessment Appeals, Guidance for Centres'* (Publication Code: A0992/2) was circulated to centres in March last year. The general section at the front of the document provides information on prelims, NABs and gathering evidence for estimates and appeals. Detailed advice on compiling estimates for each of the subjects in Technical Education is given in the subject-specific sections at the back of the document.

In particular, please note that estimates must reflect **all** external components and weighting of a course. For example, estimates of performance should be based on the '70% exam ~ 30% coursework' weighting in Graphic Communication and the '40% exam ~ 60% coursework' weighting in Craft and Design.

This year further information on Appeals has been produced:

- *'The Appeals Process: a guide for centres'* (Publication Code: AA0930/3, June 2002) advises centres on rights of appeals, grounds for appeal and appropriate procedures.
- *'The Appeals System 2002: how it Works'* (Publication Code: FD1379/2, June 2002) leaflet explains who qualifies for an appeal and when appeals must be submitted to SQA.
- *'Notes of guidance for centres on the Appeals process and on the preparation of evidence to support estimates and Appeals'* (circular from Tom Drake, General Manager, February 2002) clarifies what constitutes appropriate evidence for the purpose of Appeals.

As part of the examination cycle, you are asked to submit estimate grades for each candidate you have entered for a course. Estimates are a prerequisite for absentee and appeal considerations and must be based on sound evidence, which has to be submitted in support of any absentee or appeal case. Evidence used to compile Estimates and support Appeals must be based on national standards and all the components and weighting of the relevant external course assessment (see above).

- **Prelims**

External examination Papers have certain generic features to ensure that they are valid and reliable, such as they use original questions (not easily predicted by candidates) and each paper is an ‘unique entity’ in its own right. Prelim papers must emulate this and be designed to reflect the nature, scope, and depth of standards set in the external examination paper.

For estimate and appeal purposes, viable Prelim papers must:

- reflect the scope, depth and duration of Specimen and actual examination papers and use questions from a variety of different past years examination papers. (It is useful if you indicate the source of each question, eg Q3 (modified)1996; Q2 2000; teacher compiled extended/integrated NAB 002..... ; etc)
- have a detailed marking scheme, be marked in accordance with that marking scheme and have appropriate cut-off scores applied - Standard Grade cut-off scores at each level should be approximately 70% for the upper grade and 50% for the lower grade of an element, National Course cut-off scores should be set at approximately 70% for grade A and 50% for grade C with grade B falling midway
- allow candidates to provide evidence that they have met the course grade descriptions and retained, integrated and applied knowledge and understanding from across all units (or relevant SG elements).

Previous years examination papers are the most reliable source of potential prelim questions, but appropriate NAB questions may also be used. If NAB questions are used in a prelim they should be marked in accordance with a Prelim marking scheme; comparable to the context of those in the Specimen paper; marked to the standard set in the Specimen paper marking scheme; and different from those sat by candidates in their NAB tests.

The most common failings of Prelims are that they:

- × use the Specimen Paper, material lifted ‘en block’ from past examination papers or commercially produced papers in the public domain
- × do not carry enough marks or time allocations to reliably assess candidates, ie mark and timing allocations do not reflect those of the external examination.
- × are not comprehensive enough in scope/do not meet national standards (i.e. the course is not sampled or levelled appropriately – where necessary, prelim evidence should be supplemented by additional evidence (eg NABs or similar class tests) to cover later part of a course
- × use a single ‘Composite’ Standard Grade paper - in which all candidates, irrespective of ability, are tested on a single prelim paper (which disadvantages both higher and lower achieving candidates)
- × do not have cut-off scores or use unacceptably low cut-off scores
- × are marked inconsistently or have other marking anomalies (such as inappropriate use of half marks - which can inflate candidate’s attainment).

Centres generating their own prelim papers can draw heavily on past SQA papers for questions. In such cases, however, centres should note that a past SQA paper in its entirety, or a straight split from two years, will not be accepted as evidence to support an appeal.

Similarly, SQA specimen question papers and commercial papers in the public domain are not acceptable Appeals evidence. However, it is possible for centres to use a judicious selection of individual questions drawn from a range of past papers, and preferably adapted, to make up a prelim paper, but sets of questions should not be lifted ‘en bloc’ from past papers.

## CRAFT & DESIGN

### 1. Arrangements

The current versions of Arrangements documents (copies of which can be found on the SQA website) for Craft & Design are:

- Standard Grade, Foundation, General and Credit Levels in and after 1989
- Intermediate 2, 3<sup>rd</sup> Edition, December 1999
- Higher, 4<sup>th</sup> Edition, December 1999
- Advanced Higher, 3<sup>rd</sup> Edition, June 2002

### 2. Design Assignment 'Topics' for Session 2002/2003

One of the NQ Review recommendations for Craft and Design courses was for SQA to issue an annual list of topics for Intermediate 2 and Higher Design Assignments. Centres were advised in June 2002 that for session 2002/2003, candidates must choose **one** of the following three topics for their Design Assignment:

- **The Garden**
- **Art Nouveau**
- **Storage**

All material presented in individual Design Assignments **must** be a candidate's own work. Candidates may individually select a topic, or be directed as a 'whole class' to a topic. If a 'whole class' approach is adopted however, special care must be taken to ensure that all material presented in individual Design Assignments is entirely the candidate's own work.

Finally, please note that candidates must select a Design Assignment product that is suitable **for commercial manufacture** and not school workshop manufacture.

### 3. Reduction of Assessment

In August 2002, centres were informed that as a result of the NQ Review for Craft and Design, the volume of internal assessment has been reduced. This is an interim measure until the review of the subject area has been completed and new course Arrangement documents have been put in place for implementation in 2004/2005. The attached appendices outlines the evidence requirements that have been removed from the current NABs a summary of the reduction in internal assessment requirements for the current NABs.

### 4. Revised Design Assignment Guidance

Design Assignment Guidance documents for Intermediate 2 and Higher Courses in and after 2002 were issued to all centres in October 2002. The Guidance has addressed another of the recommendations of the NQ Review, that of the removal of the link between the Product Model Unit and the Design Assignment.

Candidates are now required to evaluate their design proposal in the Evaluation Section of the Guidance. This evaluation need no longer be based upon the practical work from the Product Model Unit however centres can still choose to evaluate their design proposal using the Product Model as in previous years. Centres should note that a new Section on Modelling has been included in the Design Assignment Guidance.

## 5. Estimates

It was evident from Appeals 2002 that some centres are not estimating candidate performance effectively and are not following the correct procedures for deriving estimates. In some cases centres are supplying estimates to SQA based purely on a prelim which produces higher than expected results when compared with actual performance.

For NQ courses, centres must put together estimates based on the percentage weighting of the External Assessment components ie the 40% Examination and the 60% Design Assignment (Extended Case Study at Advanced Higher). A useful diagram for this has been posted in the Files section of the SmartGroup under Estimates and Appeals.

When considering each component of External Assessment, centres are advised to use NAB tests and, if used, a Prelim (comparable in demand and complexity to those exemplified by the specimen question paper) as performance indicators for the Examination. Design Activity or folio work should be used as performance indicators for the Design Assignment/Extended Case Study.

## 6. Prelims

Ideally, a prelim should be a centre generated paper. The difficulty of creating new questions and question papers from scratch is appreciated, but it is one way of ensuring that the question papers are secure and the authenticity of the evidence is not compromised by candidates having prior sight of the questions or tasks.

If the above is not possible, prelims can be produced by using individual questions drawn from a range of past papers, and preferably adapted, to make up a prelim paper. Sets of questions should not be lifted en bloc from past papers, specimen papers or papers within the public domain. One very good example of a prelim from a centre at this years Standard Grade Appeals was the first sheet of the included marking scheme shown below:

### Credit Paper

- Q1 - 1997 Evaluation of design – prototype, scale model
- Q2 - 1997 Design spec. & colour
- Q3 - 1997 Fixings metal ie rivets, permanent, non perm
- Q4 - 1998 Finishes
- Q5 - 2001 Dip coating, thread cutting
- Q6 - 2001 Tools/materials – comparisons
- Q7 - 2001 Design – anthropometrics, percentiles
- Q8 - 1998 Plastics
- Q9 - 1996 Health and safety
- Q10 - 1997 Acrylic design & Mw turning

### General Paper

- Q1 - 1996 Plastics
- Q2 - 1997 Casting
- Q3 - 2001 Manufactured boards
- Q4 - 1998 Mw turning
- Q5 - 1998 Wood turning
- Q6 - 2001 Construction – wood

Cut-off scores out of 60

	Mark	Final Grade
Foundation Paper		
45%-64%	27-38	6
65%+	39+	5
General Paper		
48%-64%	29-38	4
65%+	39+	3
Credit Paper		
48%-64%	29-38	2
65%+	39+	1

In the above instance, the initial two pages, which accompanied a detailed marking scheme, enabled the Appeals Examiner to determine that questions had been selected from a variety of past papers and on further checking it was discovered that the questions had been adapted and some of the tools/products had also been changed. The paper was therefore valid and reliable and the appeals were granted on the basis of the quality of the evidence and candidate responses.

## 7. Appeals

SQA offers a unique Appeals system in that candidates may be awarded an appeal on the basis of appeals evidence alone and without further checking of scripts. It is therefore imperative that as much appeals evidence is submitted by centres so that candidates have the best chance of a successful upgrade.

At Standard Grade, appeals evidence usually takes the form of a prelim. Please note that a composite Standard Grade paper (ie covering all three levels) disadvantages Credit level candidates in particular, as Foundation type questions have to be disregarded for both estimate and appeal purposes. Overall, centres that use discrete papers for each level have an increased chance of successful appeals.

For Intermediate 2, Higher and Advanced Higher, appeals evidence normally consists of NAB tests, a prelim (comparable in demand and complexity to those exemplified by the specimen question paper) and Design Activity evidence most commonly for Designing for People and Designing for Manufacture folios. Where appeals cannot be granted for NQ courses on the basis of the evidence alone, Examiners will scrutinise the script evidence but may also consider appeals evidence in support of this. They will also consider 'like for like' evidence eg NAB Tests and prelims in support of poor examination performance and Design Activity work in support of poor Design Assignment/Extended Case Study performance.

It is therefore evident that submitting more appeals evidence enables the examiner to make a more informed decision on the basis of valid and reliable evidence.

**Reduction of Internal Assessment requirements, Session 2002/03**

The following tables outline where evidence is no longer required for Unit assessment and moderation purposes.

**Intermediate 2 Craft and Design course**

Unit Title/No.	IA No./Type	Outcome/PC	Notes
Product Evaluation & Graphic Techniques D125 11	IA2 – Coursework	Outcome 2, PC (b)	No longer required as assessment evidence. Candidates should only use their best work for the remaining PC of IA2.
Designing for People D126 11	IA1 – Design Activity	Outcome 1, PC (c)	No longer required as assessment evidence.
		Outcome 2, PC (c)	
		Outcome 4, PCs (c) and (d)	
Designing for Manufacture D127 11	IA2 – Design Activity	Outcome 2 – all PCs	No longer required as assessment evidence. A design folio is no longer required.
	IA2 – Design Activity	Outcome 3 – all PCs	
Product Model D128 11	IA1 – Practical	Outcome 1, PC (a)	No longer required as assessment evidence.

**Higher Craft and Design course**

Unit Title/No.	IA No./Type	Outcome/PC	Notes
Product Evaluation & Graphic Techniques D125 12	IA2 – Coursework	Outcome 2, PC (c)	No longer required as assessment evidence. Candidates should only use their best work for the remaining PCs of IA2.
Designing for People D126 12	IA1 – NAB Test	Outcome 1, PC (c)	No longer required as assessment evidence.
	IA2 – NAB Test	Outcome 2 – all PCs	No longer required as assessment evidence.
	IA3 – Design Activity	Outcome 4, PC (c)	No longer required as assessment evidence.
Designing for Manufacture D127 12	IA3 – Design Activity	Outcome 3 – all PCs	No longer required as assessment evidence. A design folio is no longer required.
Product Model D128 12	IA1 – Practical	Outcome 1, PC (a) partial	Only the ‘List of Stages’ is required as assessment evidence. There is no need for the ‘Cutting List’.
		Outcome 1, PC (b)	No longer required as assessment evidence.

Summary of revised Internal Assessment requirements, Session 2002/03

Intermediate 2 Craft and Design course

Product Evaluation & Graphic Techniques	IA1	Outcome 1	Assignment	PC(a)	PC(b)	PC(c)
	IA2	Outcome 2	Coursework	PC(a)	<del>PC(b)</del>	

Designing for People	IA1	Outcome 1	Design Activity	PC(a)	PC(b)	<del>PC(c)</del>	60% Cut Off
		Outcome 2		PC(a)	PC(b)	<del>PC(c)</del>	60% Cut Off
		Outcome 3		PC(a)	PC(b)	60% Cut Off	
		Outcome 4		PC(a)	PC(b)	<del>PC(c)</del>	<del>PC(d)</del>

Designing for Manufacture	IA1	Outcome 1	Investigation	PC(a)	PC(b)		
	IA2	Outcome 2	Design Activity	<del>PC(a)</del>	<del>PC(b)</del>		
		Outcome 3		<del>PC(a)</del>	<del>PC(b)</del>	<del>PC(c)</del>	<del>PC(d)</del>

Product Model	IA1	Outcome 1	Practical	<del>PC(a)</del>	PC(b)	
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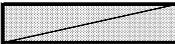
Higher Craft and Design course

Product Evaluation & Graphic Techniques	IA1	Outcome 1	Assignment	PC(a)	PC(b)	PC(c)
	IA2	Outcome 2	Coursework	PC(a)	PC(b)	<del>PC(c)</del>

Designing for People	IA1	Outcome 1	NAB Test	PC(a)	PC(b)	<del>PC(c)</del>	65% Cut Off
	IA2	Outcome 2	NAB Test	<del>PC(a)</del>	<del>PC(b)</del>	<del>PC(c)</del>	
	IA3	Outcome 3	Design Activity	PC(a)	PC(b)	60% Cut Off	
		Outcome 4	Design Activity	PC(a)	PC(b)	<del>PC(c)</del>	60% Cut Off

Designing for Manufacture	IA1	Outcome 1	Investigation	PC(a)	PC(b)	PC(c)	PC(d)
	IA2	Outcome 2	NAB Test	PC(a)	PC(b)	65% Cut Off	
	IA3	Outcome 3	Design Activity	<del>PC(a)</del>	<del>PC(b)</del>	<del>PC(c)</del>	

Product Model	IA1	Outcome 1	Practical	PC(a) *partial	<del>PC(b)</del>	
		Outcome 2	Practical	PC(a)	PC(b)	PC(c)

-  Assessment evidence no longer required for unit assessment.
-  Assessment evidence unaffected and still required.
-  Evidence required for part of a PC only.

## **GRAPHIC COMMUNICATION**

### **1. Arrangements Documents**

The current versions of Arrangements documents (copies of which can be found on the SQA website) for Graphic Communication are:

- Standard Grade, Foundation, General and Credit Levels in and after 1993
- Intermediate 2, Third Edition, December 1999
- Higher, Fourth Edition, December 1999
- Advanced Higher, Second Edition, April 2000

### **2. Guidance Documents**

The following Assessment Guidance documents were circulated to centres in September. They are also available on the website. Please ensure you are using the correct version (ie Session 2002/2003).

- National Qualifications: Graphic Communication, Intermediate 2, Guidance on Assessment, Session 2002/2003, Computer Graphics Folio
- National Qualifications: Graphic Communication, Higher, Guidance on Assessment, Session 2002/2003, Thematic Presentation
- National Qualifications: Graphic Communication, Advanced Higher, Guidance on Assessment, Session 2002/2003, Computer-Aided Graphic Presentation
- National Qualifications: Graphic Communication, Advanced Higher, Guidance on Assessment, Session 2002/2003, Computer-Aided 3D Modelling Presentation

Student Record sheets covering the above were circulated to centres at the end of September 2002

### **3. TMS Software Supplier Publications**

Some centres may be aware of TMS publications which claim SQA recommends them as a supplier. TMS have no such recommendation from SQA.

### **4. Standard Grade**

Centres are advised that from the 2003 examination onwards, the layout of the exam paper will change. All Knowledge and Interpretation (KI) questions will appear at the beginning of the Foundation, General and Credit papers. The Drawing Abilities (DA) questions will appear directly after the KI questions. The layout reflects adopted at Intermediate 2, Higher and Advanced Higher.

### **5. Standard Grade Prelims**

Centres have already been advised on the problems of using a single 'composite' prelim paper and of lifting material 'en block' from past papers (which is particularly relevant for Standard Grade as the lifting of a complete element (eg either KI or DA) from a past paper is not viable for Appeal purposes).

### **6. Reduction of Assessment**

In August 2002, centres were informed that as a result of the NQ Review for Graphic Communication, the volume of internal assessment has been reduced. The following appendix provides a summary of the revised internal assessment requirements for the current NABs.

Summary of revised Internal Assessment Requirements Session 2002/2003

Intermediate 2

Technical Graphics 1 D171 11	IA1	Outcome 1	Internal Folio	PC (a)	PC (b)	PC (c)	PC (d)
		Outcome 2		PC (a)	PC (b)	PC (c)	
		Outcome 3		PC (a)	PC (b)	PC (c)	
	<del>IA2</del>	<del>Outcome 1</del>	<del>Drawing Abilities Test</del>	<del>PC (e)</del>			
	<del>IA3</del>	<del>Outcome 2</del>	<del>Drawing Abilities Test</del>	<del>PC (d)</del>			

Technical Graphics 2 D172 11	IA1	Outcome 1	Internal Folio	PC (a)	PC (b)	PC (c)
		Outcome 2		PC (a)	PC (b)	PC (c)
		Outcome 3		PC (a)	PC (b)	PC (c)
	<del>IA2</del>	<del>Outcome 2</del>	<del>Drawing Abilities Test</del>	<del>PC (d)</del>		

Computer Graphics D173 11	IA1	Outcome 1	Internal Folio	PC (a)	PC (b)	PC (c)
		Outcome 2		PC (a)	PC (b)	
		Outcome 3		PC (a)	PC (b)	
	IA2	Outcome 4	Written Test	PC (a)	PC (b)	

Higher

Technical Graphics 1 D171 12	IA1	Outcome 1	Internal Folio	PC (a)	PC (b)	PC (c)	PC (d)
		Outcome 2		PC (a)	PC (b)		
		Outcome 3		PC (a)	PC (b)		
	<del>IA2</del>	<del>Outcome 1</del>	<del>Drawing Abilities Test</del>	<del>PC (e)</del>			
	<del>IA3</del>	<del>Outcome 2</del>	<del>Drawing Abilities Test</del>	<del>PC (e)</del>			

Technical Graphics 2 D172 12	IA1	Outcome 1	Internal Folio	PC (a)	PC (b)	PC (c)	PC (d)
		Outcome 2		PC (a)	PC (b)		
	<del>IA2</del>	<del>Outcome 1</del>	<del>Drawing Abilities Test</del>	<del>PC (e)</del>			
	IA3	Outcome 3	Written Test	PC (a)	PC (b)		

Computer Graphics D173 12	IA1	Outcome 1	Internal Folio	PC (a)	PC (b)	PC (c)
		Outcome 2		PC (a)	PC (b)	
		Outcome 3		PC (a)	PC (b)	
	IA2	Outcome 4	Written Test	PC (a)	PC (b)	

Key

eg PC (e)	Assessment evidence is no longer required.
	Assessment evidence is required.
	Evidence requirements have been reduced to any 2 bullet points from each section of the checklist for CAD, computer-rendered drawings and DTP documents.

## **PRACTICAL CRAFT SKILLS**

The NQ Review reported that there was no requirement for major changes in either Woodworking Skills or Practical Craft Skills. This is good news which means that over the forthcoming period we can look at ways of introducing more new projects in ways that will retain the motivating factor in the course.

As part of the NQ Review an investigation will be undertaken into the need for a Higher Practical Craft Skills.

The course projects for Woodworking Skills and Engineering Craft Skills will be issued this month. We are using the same projects as in previous years although there will be an additional one door cabinet which centres may wish to use for Woodworking Skills.

One of the things we will be looking at next year is the course project. We will consider ways of introducing more variety into the course projects while at the same time retaining the national standard. One suggestion is that a new project is distributed every two years. Centres would be required to do this project. As yet there is no decision on this and centres will be kept up to date with any changes.

As in previous years there is no need to submit an estimate for candidates entered for Woodworking Skills or Engineering Craft Skills. Moderation visits for the course projects will take place from 31 March 2003 to 14 May 2003. The final date for submission of course results to SQA is 14 May 2003.

The Senior Moderator's report for Practical Craft Skills for 2002 indicated that in the third year of Practical Craft Skills the courses generally were found to have been very well conducted by all and there were no real difficulties encountered in the assessment moderation process. A greater number of centres presented in an exemplary manner with outstanding results in the quality of craft skills. There was also evidence of a very high standard of teaching and course management, in some cases in difficult circumstances of centre development and refurbishment. It was also encouraging to find that a higher number of female candidates are taking the course and scoring high grades.

Generally, the preparation and presentation of materials for Moderation was conducted to a very high professional standard and the internal assessment was found to be almost 100% accurate in terms of concordance with the national standard.

Candidates are motivated towards PCS because:

- ◆ It is a hands-on practical activity
- ◆ There is no involvement in design
- ◆ There is no external exam
- ◆ Teaching staff say that now that the course is embedded in the curriculum and they have become familiar with the administration procedures, recording and reporting, class management and time scale issues they are finding the course much easier to teach.

## **Practical Craft Skills:**

### **Woodworking Skills and Engineering Craft Skills**

#### **Points of information**

- 1.** Moderation for the course can only take place if the centre has an approved project available for moderation.
- 2.** It is acceptable for moderation to take place before finishing is complete. For example, for Woodworking Skills in this situation the project must be well advanced in terms of assembly and jointing work with evidence of a well-sanded finish but with varnish yet to be applied. For Engineering Craft Skills moderation may take place before finishing is complete.
- 3.** Centres are strongly advised to use the recommended project. If a centre wishes to use its own course project it must send it to SQA for prior moderation no later than 31 December 2002. If a project has already been prior moderated there is no need to submit it again.
- 4.** Centres should not send in final marks until after the moderation visit.
- 5.** Moderation will take place during 31 March 2003 and 14 May 2003.
- 6.** It is the responsibility of the centre to submit marks to SQA after the moderation visit using the Internal Assessment – Mark Form.
- 7.** Projects should be marked out of 100. SQA will not accept a Grade and band. There must be a mark out of 100 for each candidate.
- 8.** Final marks should be submitted no later than 14 May 2003.
- 9.** Teachers/lecturers should ensure that where a candidate has demonstrated progress from Int 1 to Int 2 during a course that unit results are recorded appropriately. For example, if the first unit is recorded at Int 1 but the candidate goes on to achieve subsequent units and the course project at Int 2, then the candidate should be resulted at Int 2 for the first unit. In this case it would be assumed that the project work overtook the first unit result.
- 10.** It is the centre's responsibility to ensure that all unit and course entries match the candidate's actual achievement. The last date for amending a Course Level by the normal means is 31 March 2003. Centres may be charged for changing levels after this date. See Section 8.10 of the Operational Guide for Centres for more details.

- 11.** Moderators will accept bands at adjacent levels. For example, if the teacher/lecturer marks a candidate at Int 2 A (lower) and the moderator judges the project to be at Int 2 B (upper) then the candidate's work will be accepted. If, however, in this example the moderator judges the project to be at Int 2 B (lower) then it will be not accepted.

A upper

A lower	Teacher's judgement	Accepted
B upper	Moderator's judgement	
B lower	Moderator's judgement	Not accepted

C upper

C lower

- 12** If there are more than two “not accepted” in the first six candidates then the moderator will look at the next six. If there are more than two in this group that are “not accepted” then the moderator will discuss with the teacher/lecturer if remedial action can be taken. In this case there will be a return visit and certification in this subject may be delayed.

If you would like any more information on Practical Craft Skills, please contact Gordon Rodgers on 0141 242 2192 or e-mail [gordon.rodgers@sqa.org.uk](mailto:gordon.rodgers@sqa.org.uk).

## TECHNOLOGICAL STUDIES

### 1. Arrangements

The current versions of Arrangements documents (copies of which can be found on the SQA website) for Technological Studies are:

- Revised Standard Grade, General and Credit levels in and after 2003 (May 2001)
- Intermediate 2 – 3<sup>rd</sup> edition (December 1999)
- Higher – 3<sup>rd</sup> edition (December 1999)
- Advanced Higher – 2<sup>nd</sup> edition (April 2000)

### 2. Data Booklets

Current versions of Technological Studies Data Booklets (which can also be found on the SQA website) are:

- Standard Grade: 404SQP/205 (August 2002)
- Intermediate 2 and Higher, Publication code: G0894 (October 1999)
- Advanced Higher, Publication Code: G1313 (March 2001)

A Data Booklet for the revised Standard Grade Technological Studies course is currently being produced in A5 format for 2003 examination purposes. However, Centres should duplicate the hard copy issued by SQA on 22 August 2002 for use in the classroom. Alternatively, the document may be downloaded from the SQA website and photocopied to meet individual Centres' requirements.

*Note:* There has been a proposal to merge the Standard Grade Data Booklet with that of Intermediate 2. This would also allow us to merge the Higher and Advanced Higher documents into one booklet. We will be discussing this proposal with Centres in greater detail in the near future, however, if you have a particular view in the meantime, please contact Jayne Terzza on 0141 242 2203 or e-mail @ [jayne.terzza@sqa.org.uk](mailto:jayne.terzza@sqa.org.uk)

### 3. Revised Standard Grade Technological Studies

The first presentations of the revised Standard Grade Technological Studies course take place in 2003. Please note that the **code for the revised course is 4040**. All Centres should by now have received the following documents, which were issued in August:

- Standard Grade Technological Studies Specimen Question Paper – Credit level
- Marking Instructions for Specimen Question Paper – Credit level
- Standard Grade Technological Studies Specimen Question Paper – General level
- Marking Instructions for Specimen Question Paper – General level
- Specimen Application of Technology Assignment – Applied Electronics
- Specimen Application of Technology Assignment – Programmable Control
- *Guidance on Assessment – Application of Technology Assignment*
- EX5 (Flyleaf) – Application of Technology Assessment Record
- Standard Grade Data Booklet

A further six Application of Technology assignments (3 x Applied Electronics and 3 x Programmable Control) were issued under Confidential cover on 17 October 2002. The assignments should be photocopied to meet individual requirements, however, Centres should be reminded that, for the purposes of external assessment, grading of the Application of Technology element will be based on candidate performance in only **one** summative assignment ie either an Applied Electronics **or** a Programmable Control assignment. **It is therefore imperative that any assignment used for the final grading of the AT element remains entirely confidential within the Centre.**

Centres are also reminded that the Application of Technology assignment is an internally assessed element which is subject to central moderation and completed assignments should, therefore, **only** be sent to SQA if your Centre is selected for moderation. The AT assignment should take no longer than 5 hours to complete and can be conducted at any time during the course. However, element grades must be submitted to SQA by 31<sup>st</sup> March in the year a candidate is presented for the external assessment.

Detailed information on assessing the Application of Technology element is provided in *Guidance on Assessment: Application of Technology Assignment* (August 2002).

#### 4. NQ Review Technological Studies – Reduction in the volume of Internal Assessment

In August 2002, Centres were informed that, as a result of the NQ Review, the volume of internal assessment had been reduced for Technological Studies. Unfortunately, the letter issued on 20 August 2002 contained the following errors:

- Appendix 1 – Overview of the reduction in internal assessment requirements Session 2002/2003
  - Higher: Systems and Control: D187 12 - should read ' O2 AND O4 can be undertaken
  - for written tests and O3 OR O4 for Practical Activities.
  - Higher: Case Study Report: Course code to be entered – D191 12.
- Appendix 2 – Revised evidence requirements (from Session 2002/2003)
  - Higher: Case Study Report: Course code should read D191 12.

Amended versions of the Technological Studies Appendices are attached for reference. Please destroy all previous copies.

**Special Note:** Assessment must be carried out on a **Unit** pass or fail basis. Overall scores for NABs are to be aggregated and a cut-off score of 60% applied to the total marks obtained. Cut-off scores should be rounded down to the candidates' advantage. Tests carried out must be taken from any **one** of the NABs i.e. questions cannot be selected from across different NABs to construct a Unit test or retest.

If you require additional information regarding Technological Studies, please contact Jayne Terzza on 0141 242 2203 or e-mail@ [jayne.terzza@sqa.org.uk](mailto:jayne.terzza@sqa.org.uk)

## NQ Review: Technological Studies

## Overview of the reduction in internal assessment requirements Session 2002/2003

## Intermediate 2

Unit Title/No	IA No	Outcome/s	Type of assessment	Performance Criteria				
<b>Energy: D185 11</b>	IA1	Outcome 1	Structured questions	<del>PC (a)</del>	<del>PC (b)</del>			
	IA2	Outcome 2	Structured questions	<del>PC (a)</del>	<del>PC (b)</del>	<del>PC (e)</del>		
	IA3	Outcome 3	Structured questions	PC (b)				
	IA4	Outcome 4	Structured questions	PC (a)	PC (b)	PC (c)	PC (d)	
	IA5	Outcome 3	Practical activity	<del>PC (a)</del>				
<b>Applied Electronics: D186 11</b>	IA1	Outcome 1	Structured questions	PC (a)	PC (b)			
	IA2	Outcome 2	Structured questions	PC (a)	PC (b)	PC (c)	PC (d)	
	IA3	Outcome 3	Structured questions	<del>PC (b)</del>	<del>PC (e)</del>	<del>PC (d)</del>		
	IA4	Outcome 1	Practical activity	<del>PC (e)</del>				
		Outcome 2		<del>PC (e)</del>	<del>PC (f)</del>			
Outcome 3		PC (e)		PC (f)				
<b>Systems and Control: D187 11</b>	IA1	Outcome 1	Structured questions	PC (a)	PC (b)	PC (c)	PC (d)	
	IA2 <sup>†</sup>	Outcome 2	Structured questions	<del>PC (a)</del>	<del>PC (b)</del>	<del>PC (e)</del>	PC (d)	† Q2 of O2 only
	IA3	Outcome 3	Structured questions	<del>PC (a)</del>	<del>PC (b)</del>	<del>PC (e)</del>	<del>PC (d)</del>	
	IA4	Outcome 4	Structured questions	<del>PC (a)</del>	<del>PC (b)</del>			
	IA5	Outcome 4	Practical activity	PC (c)	PC (d)			
<b>Mechanical Systems: D188 11</b>	IA1 <sup>†</sup>	Outcome 1	Structured questions	<del>PC (a)</del>	PC (b) <sup>†</sup>	<del>PC (e)</del>		† Q2 of O1 only
	IA2	Outcome 2	Structured questions	PC (a)	PC (b)	PC (c)	PC (d)	
	IA3	Outcome 1	Practical activity	<del>PC (d)</del>	<del>PC (e)</del>			

## Higher

<b>Applied Electronics: D186 12</b>	IA1	Outcome 1	Structured questions	PC (a)	PC (b)	PC (c)			
	IA2 <sup>†</sup>	Outcome 2	Structured questions	PC (a)	PC (b)	PC (c)		† Q1 & Q5 of O2 only	
	IA3	Outcome 3	Structured questions	<del>PC (a)</del>	<del>PC (b)</del>	<del>PC (e)</del>	<del>PC (d)</del>		
	IA4	Outcome 1	Practical activity	PC (d)	PC (e)				
		Outcome 2		<del>PC (d)</del>	<del>PC (e)</del>				
Outcome 3		PC (e)		PC (f)					
<b>Systems and Control: D187 12</b>	IA1	Outcome 1	Structured questions	<del>PC (a)</del>	<del>PC (b)</del>	<del>PC (e)</del>			
	IA2	Outcome 2 <sup>†</sup>	Structured questions	PC (a)	PC (b)	PC (c)		†O2 AND O4 can be undertaken for written tests and O3 OR O4 for Practical Activities. Overall scores for NABs are to be aggregated and a Unit cut-off score of 60% applied to the total marks obtained.	
	IA3	Outcome 3	Structured questions	<del>PC (a)</del>	<del>PC (b)</del>	<del>PC (e)</del>	<del>PC (d)</del>		
	IA4	Outcome 4 <sup>†</sup>	Structured questions	PC (a)	PC (b)	PC (c)			
	IA5	Outcome 2	Practical activity	<del>PC (d)</del>					
		Outcome 3 <sup>†</sup>		PC (e)	PC (f)				
Outcome 4 <sup>†</sup>		PC (d)		PC (e)	PC (f)				
<b>Structures and Materials: D190 12</b>	IA1	Outcome 1	Structured questions + Plotting graph (for Outcome 3 PC (a))*	<del>PC (a)</del>	<del>PC (b)</del>	<del>PC (e)</del>	<del>PC (d)</del>	<del>PC (e)</del>	†Written tests can be covered by O2 & O4 in total + Q1 of O3
	IA2	Outcome 2		PC (a)	PC (b)	PC (c)	PC (d)		
	IA3	Outcome 3 <sup>†</sup>		PC (a)*	PC (b)	PC (c)	PC (d)	PC (e)	
	IA4	Outcome 4		PC (a)	PC (b)	PC (c)	PC (d)		
<b>Case Study Report: D191 12</b>	IA	Outcome 1	1250 - 1500 word report	PC (a)	PC (b)	PC (c)	PC (d)		
		Outcome 2		PC (a)	PC (b)	PC (c)	PC (d)	PC (e)	

## Advanced Higher

Unit Title/No	IA No	Outcome(s)	Type of assessment	Performance Criteria					
<b>Applied Electronics: D186 12</b>	IA1 <sup>†</sup>	Outcome 1	Structured questions	PC (a)	PC (b)	<del>PC (e)</del>			
	IA2	Outcome 2	Structured questions	<del>PC (a)</del>	<del>PC (b)</del>				
	IA3	Outcome 3	Structured questions	<del>PC (a)</del>	<del>PC (b)</del>				
	IA4	Outcome 4	Structured questions	PC (a)	PC (b)	PC (c)			
	IA5	Outcome 1	Practical activity	<del>PC (d)</del>	<del>PC (e)</del>				
		Outcome 2		PC (c)	PC (d)				
Outcome 3		PC (c)		PC (d)					
<b>Systems and Control: D187 13</b>	IA1	Outcome 1	Structured questions	<del>PC (a)</del>	<del>PC (b)</del>	<del>PC (e)</del>			
	IA2	Outcome 2	Structured questions	<del>PC (a)</del>	<del>PC (b)</del>	<del>PC (e)</del>	<del>PC (d)</del>		
	IA3	Outcome 3	Structured questions	PC (a)	PC (b)	PC (c)			
	IA4	Outcome 2	Practical activity	PC (e)					
		Outcome 3		<del>PC (d)</del>					
<b>Structures and Materials D190 13</b>	IA1	Outcome 1	Structured questions	<del>PC (a)</del>	<del>PC (b)</del>	<del>PC (e)</del>			
	IA2	Outcome 2	Structured questions	PC (a)	PC (b)	PC (c)	PC (d)		
	IA3	Outcome 3	Structured questions	PC (a)	PC (b)	PC (c)	PC (d)		
<b>Technological Studies: Project Enquiry: D192 13</b>	IA	Outcome 1	2000 - 2500 word report	PC (a)	PC (b)	PC (c)	PC (d)	PC (e)	

† Written tests will be conducted through IA1 Q2 only, & IA4 in its entirety.

Practical tests will be: to design, simulate, construct & evaluate:

- a sequential logic control system for Outcome 2
- an analogue electronic system for Outcome 3.

## Key to Table

<del>PC(d)</del>	Assessment evidence no longer required for unit assessment
PC(d)	Assessment evidence requirements unaffected and remain the same
†	Additional notes detailing evidence requirements

NQ Review : Technological Studies – Revised evidence requirements (from Session 2002/2003)

Intermediate 2

Unit Title/No	IA No/Type	Outcomes/PCs remaining	Notes
Energy: D185 11	IA3 – Structured questions	Outcome 3 - PC (b)	No practical activity is required for assessment purposes in this Unit.
	IA4 - Structured questions	Outcome 4 – All PC	
Applied Electronics: D186 11	IA1 - Structured questions	Outcome 1 – PC (a), (b)	The written tests will be covered by the existing IA1 and IA2 ie omit the written test in IA3.
	IA2 - Structured questions	Outcome 2 – PC (a), (b), (c), (d)	
	IA4 - Practical activity	Outcome 3 – PC (e), (f)	<b>The simulation and construction must apply to the same problem circuit.</b>
Systems and Control: D187 11	IA1 - Structured questions	Outcome 1 – All PC	The written tests in Outcomes 3 & 4 should be replaced with the practical activity found in IA5. <b>Evidence must include a flowchart, program listing and description of the system and its performance (evaluation).</b> The overall pass mark will be 60% of the combined scores for IA1 in total and IA2 (Q2). <b>The tests must be taken exclusively from any one of the three NABs ie questions cannot be selected from across different NABs to construct a Unit test or retest.</b>
	IA2 (Q2) - Structured questions	Outcome 2 - PC (d)	
	IA5 – Practical activity	Outcome 4 – PC (c), (d)	
Mechanical Systems: D188 11	IA1 (Q2) – Structured questions	Outcome 1 – PC (b)	The Unit is now assessed through written tests alone ie practical activities are no longer required for assessment purposes.
	IA2 – Structured questions	Outcome 2 – PC (a), (b), (c), (d)	

Higher

Unit Title/No	IA No/Type	Outcomes/PCs remaining	Notes
Applied Electronics: D186 12	IA1 – Structured questions	Outcome 1 – PC (a), (b), (c)	<b>The tests must be taken exclusively from any one of the three NABs ie questions cannot be selected from across different NABs to construct a Unit test or retest.</b> The Practical Activity for this Unit will combine Outcomes 1 and 3 into one exercise <b>and should consist of the design, simulation, construction and evaluation of a logic circuit which includes an appropriate input sensing circuit OR an output driver circuit.</b>
	IA2 (Q1 & 5) – Structured questions	Outcome 2 – PC (a), (b), (c)	
	IA4 – Practical activity	Outcome 1 – PC (d), (e) Outcome 3 – PC (e), (f)	
Systems and Control: D187 12	IA2 – Structured questions	Outcome 2 – PC (a), (b), (c)	To allow flexibility of classroom management, Outcome 3 OR 4 can be undertaken for the Practical activity and Outcomes 2 AND 4 for written tests. <b>It should be noted that this is a Unit pass or fail.</b> Overall scores for the NABs are to be aggregated and a unit cut-off score of 60% is to be applied to the total marks obtained. Cut-off scores should be rounded down to the candidates' advantage.
	IA4 – Structured questions	Outcome 4 – PC (a), (b), (c)	
	IA5 – Practical activity	Outcome 3 – PC (e), (f) <b>OR</b> Outcome 4 – PC (d), (e), (f)	
Structures & Materials: D190 12	IA2	Structured questions + Plotting graph	Written tests can be covered by Outcomes 2 and 4 in total and Q1 of Outcome 3. <b>In order to retain the practical activity, a graph must be plotted from data as specified in the Arrangements document.</b>
	IA3 (Q1)		
	IA4		
Case Study Report: D191 12	IA – 1250-1500 word report	Outcomes 1 & 2 – All PC	No change to assessment evidence requirements.

Advanced Higher

Unit Title/No	IA No/Type	Outcomes/PCs remaining	Notes
<b>Applied Electronics: D186 13</b>	IA1 (Q2) – Structured questions	Outcome 1 – PC (a), (b)	Written tests will be conducted through IA1 (Q2 only) together with IA4 in its entirety. The Practical activities to be covered are: <ul style="list-style-type: none"> <li>▪ to design, simulate, construct and evaluate a sequential logic control system (through Outcome 2)</li> <li>▪ to design, simulate, construct and evaluate an analogue electronic system (through Outcome 3).</li> </ul>
	IA4 – Structured questions	Outcome 4 – All PC	
	IA5 – Practical activity	Outcome 2 – PC (c), (d)	
		Outcome 3 – PC (c), (d)	
<b>Systems and Control: D187 13</b>	IA3 – Structured questions	Outcome 3 – PC (a), (b), (c)	IA3 in its entirety covers the written tests whilst IA4 covers Outcome 2 for the practical activity ie flowchart, program listing and written evaluation.
	IA4 – Practical activity	Outcome 2 – PC (e)	
<b>Structures and Materials: D190 13</b>	IA2 – Structured questions	Outcome 2 – All PC	IA1 – Outcome 1 has been removed in its entirety for assessment evidence purposes.
	IA3 – Structured questions	Outcome 3 – All PC	
<b>Technological Studies: Project Enquiry: D192 13</b>	IA – 2000-2500 word report	Outcome 1 – All PC	No change to assessment evidence requirements.