

Research and Information Services

MONITORING STANDARDS REPORT



HNC Mechanical Engineering

G0BF

Introduction

A Scrutiny Panel, consisting of two members of SQA's moderating team and an external specialist in the field judged assessment material and candidate evidence against the standards of units:

- ◆ **D4GD 04:** Design Drawing and Communication for Engineers
- ◆ **D4JL 04:** Mechanical Engineering Principles: Statics and Dynamics
- ◆ **D4JM 04:** Mechanical Engineering Principles: Thermofluids
- ◆ **D4FW 04:** Computer Aided Draughting

Centres were asked to provide evidence for two candidates for each of the above units.

1 Quality of collected material

The materials were generally complete, and of a suitable quality to allow the scrutiny to take place without problems.

2 Assessment instruments

A good standard across the board, but some areas for improvement were noted. See appendix for further details.

3 Evidence of candidate performance

Some minor omissions in the material provided, but the majority of the evidence fully supported the pass decisions made by centres.

4 Assessment decisions

The assessment decisions made by centres were completely in accord with those made by the Scrutiny Panel.

5 Comparing standards over time

There was no significant change in the standard of assessment when comparing the 2006 materials with those from 2002. In fact, many centres continued to use in 2006 identical, or very similar assessments, to those they used in 2002. This is perfectly acceptable for the type of units examined, which are intended to introduce the candidates to the core concepts of the subjects. However, centres should continue to review their assessment instruments on a regular basis.

6 General comments

The scrutiny produced an encouraging outcome in terms of the standard and consistency of presentation of the units which were scrutinised.

7 Conclusions

The Scrutiny Panel considered that this had been a successful exercise. It is important not to be complacent following the positive outcome of this scrutiny, and to continue to carry out similar – or enhanced – exercises in future.

8 Recommendations

The members of the Scrutiny Panel agreed that centres should consider indicating whether they considered the candidate evidence submitted to represent a bare pass, a clear pass, or a high standard of pass.

Appendix: Unit report

1 The Units

Unit	Main Purpose	Candidate Profile	Uptake
D4FW 04 Computer Aided Draughting	To provide candidates with a thorough grounding in the skills of computer aided draughting	Not known	Not known
D4GD 04 Design Drawing and Communication for Engineers	To provide candidates with a knowledge of graphical communication		
D4JL 04 Mechanical Engineering Principles: Statics and Dynamics	To provide candidates with a knowledge of the core concepts of statics and dynamics		
D4JM 04 Mechanical Engineering Principles: Thermofluids	To provide candidates with a knowledge of the core concepts of thermodynamics and fluid dynamics		

2 Assessment instruments

Unit	Fitness for Purpose/Integration	Quality of Presentation	Level of Demand	Conditions of Assessment	Guidance on Criteria for pass and validity to PCs and range/Summary
D4FW 04 Computer Aided Draughting	While there were some cases where relatively minor changes were needed to instruments of assessment, in general they were fit for purpose	Quality of presentation was generally good, with few instances of poor presentation	The level of demand was in nearly all cases entirely appropriate for the level of the unit	On most instruments of assessment, no indication was given of the conditions of assessment	On most assessment instruments, no guidance was given on criteria for a pass
D4GD 04 Design Drawing and Communication for Engineers					
D4JL 04 Mechanical Engineering Principles: Statics and Dynamics					
D4JM 04 Mechanical Engineering Principles: Thermofluids					

3 Evidence of candidate performance

Unit	Accuracy of Assessment Decisions	Consistency of Application of Standards	Examples of Good Assessment Practice/Summary	Comparison Over Time
D4FW 04 Computer Aided Draughting	The assessment decisions made by centres were completely consistent with those made by the Scrutiny Panel	The standards were applied consistently across all the centres scrutinised	It is useful to integrate assessment of this unit with the Design, Drawing and Communication for Engineers unit	There was no significant difference noted in the coverage and standard of the instruments of assessment, and the application of the standards themselves, when comparing the 2002 and 2006 materials. In fact, some centres used identical or very similar instruments of assessment in both samples
D4GD 04 Design Drawing and Communication for Engineers			Some centres introduced the use of CAD within this unit, which is to be encouraged. It is also useful to integrate assessment of the unit with the CAD unit	
D4JL 04 Mechanical Engineering Principles: Statics and Dynamics			Some centres made good use of a laboratory exercise within the teaching of the unit	
D4JM 04 Mechanical Engineering Principles: Thermofluids			No comment	