



**Higher National Qualifications  
Internal Assessment Report 2015  
Electrical Principles**

The purpose of this report is to provide feedback to centres on verification in Higher National Qualifications in this subject.

# Higher National Units

## General comments

In session 2015–16, two centres had external verification visits for HN Electrical Principles. Both centres were further education colleges. The two visits were conducted by different external verifiers. The external verification events were conducted using SQA's new approach to quality assurance.

The HN Units were as follows:

FY9E 34: DC and AC Principles (2)

DG3G 34: Electrical Networks and Resonance (1)

DN47 34: Three-Phase Systems (2)

DG57 35: Transmission Lines and Complex Waves (1)

The number in brackets after each Unit title indicates if the Unit was externally verified in one or both centres.

Both centres were successful at verification with overall outcome ratings indicating that they had significant strengths in HN Electrical Principles. The external verifiers confirmed that in both centres candidates undertaking HN Electrical Principles assessments were meeting national standards.

## Unit specifications, instruments of assessment and exemplification materials

In one of the two centres, assessors commented that they were content with the current HN Electrical Principles Unit specifications.

All assessment instruments reviewed by the external verifiers in the two centres were in line with the knowledge and/or skills items and evidence requirements in the relevant HN Unit specification. This means that all assessment instruments were valid, reliable, equitable and fair.

## Evidence Requirements

On reviewing assessment instruments and candidate evidence in both centres it was found that assessors and internal verifiers had a clear understanding of the evidence requirements in the above HN Units.

## Administration of assessments

Both centres had highly developed and well-documented assessment and internal verification policies and procedures which assessors and internal verifiers were following. Both external verifiers reported that sufficient documentary evidence was available to confirm that internal verification was operating effectively.

## **General feedback**

In both centres the external verifiers had good access to accommodation, candidate registers, assessment materials, internal verification forms, candidate work, candidates and staff to perform external verification.

In both centres, candidate evidence was readily available and in line with SQA requirements for external verification.

Both centres had in place appropriate communication arrangements for disseminating the outcomes of external quality reviews to relevant staff.

## **Areas of good practice**

In one centre, master folders contained all relevant information including assessment papers and solutions which ensured marking of all candidate papers was reliable and consistent. Numerous alternative assessment instruments with completed model answers were available to be used by assessors.

In one of the centres, electronic records were good and available. The 'Share Point'/staff intranet records were available demonstrating a success for the centre as this is now a mature system. The system is very useful and well accepted by staff.

In one of the centres the external verifier welcomed the opportunity to view PowerPoint lecture materials and spreadsheets relating to three-phase theory. Such materials give an additional dimension to the teaching of three-phase theory allowing candidates the opportunity to explore this topic in more depth and breadth.

## **Specific areas for improvement**

The external verifiers did not mention any areas for improvement in their reports.

# Higher National Graded Units

Titles/levels of HN Graded Units verified:

DN3V 34: Electrical Engineering: Graded Unit 1

DN3X 35: Electrical Engineering: Graded Unit 2

## General comments

External verification for DN3V 34: Electrical Engineering: Graded Unit 1 was conducted by postal verification. Only two centres were requested to submit materials for external verification.

With regard to DN3X 35: Electrical Engineering: Graded Unit 2, four centres were visited by three different external verifiers.

## Unit specifications, instruments of assessment and exemplification materials

For Electrical Engineering: Graded Unit 1, both centres used a college consortium developed examination paper and marking scheme that was prior verified by SQA.

All four centres in which the Electrical Engineering: Graded Unit 2 was externally verified were delivering and assessing the electrical engineering project in line with SQA's requirements, and were therefore meeting national standards. In general terms, candidate project submissions were of a high quality.

In one centre in which Electrical Engineering: Graded Unit 2 was externally verified, the centre's intranet system allows staff access to all aspects of the assessment and verification process. Hard copies of assessment and internal verification documents were available and found to be in line with SQA criteria requirements. Records of internal verification are inserted in master folders.

## Evidence Requirements

In one centre in which Electrical Engineering: Graded Unit 2 was externally verified, good use was made of the 24 point grading checklist contained within the Graded Unit specification to assess the evidence produced by candidates ensuring that assessment was fair, valid and reliable.

## Administration of assessments

In both centres that were externally verified by post for Electrical Engineering: Graded Unit 1, all candidate scripts sampled were marked accurately and consistently. There was clear evidence that internal verification took place — a sample of candidate scripts that were second-marked had the second marker's overall marks on the front covers of the candidate scripts. In one centre the second marker did sometimes award different marks to the first marker for certain

parts of questions and dialogue on the final mark awarded to the candidate was written down as evidence that discussions had taken place.

### **General feedback**

In one centre, candidates were well prepared for their electrical engineering project oral presentation.

In two centres, candidates commented that they found the electrical engineering project challenging but rewarding.

In one centre, assessors commented to the external verifier that undertaking the Electrical Engineering: Graded Unit 2 prepares candidates well for future university studies.

### **Areas of good practice**

In one centre where Electrical Engineering: Graded Unit 2 was externally verified, all candidates' projects were marked at an initial draft stage by the assessor and were also checked by the internal verifier who gave his considered and professional judgement as to what the likely final grade would be for each project.

In the same centre as in paragraph 1, good use was made of the centre's intranet system to communicate all matters to staff.

In another centre where Electrical Engineering: Graded Unit 2 was externally verified, the project assessment guide and planning material were of an exemplary standard and represent optimum practice for HN materials in an efficient and effective manner. Candidates could reach their full potential with this material if they apply it well. In another centre the external verifier commented as follows, 'Excellent guidance notes for candidates were prepared by the centre along with the grading checklist and oral presentation checklist'.

In yet another centre where the Electrical Engineering: Graded Unit 2 was externally verified, the centre was utilising worksheets and guidance from the SQA Graded Unit Project Toolkit. There was documented evidence that, in the planning stage of the project, candidates understand the standards required of them when they are undertaking the project. Candidates sign the assessment instrument to acknowledge understanding of the evidence they have to produce.

In the same centre as in the previous paragraph, centre staff have devised their own checklist and marking scheme. These materials are robust and ensure transparency and consistency across assessors and verifiers. Observations of assessment practice was carried out and documented by the internal verifier.

### **Specific areas for improvement**

In Electrical Engineering: Graded Unit 1, markers should clearly show the marks they have awarded to each part of the candidate's solution. This was not always the case in scripts that were externally verified this year, which made determining how the final mark was arrived at more difficult.