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Council for Quality Assurance in
General and Further Education and Training

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Report on the Quality Assurance of Assessment of the DHET November 2016 NATED: Report 190/191: Engineering Studies N2-N3 Examinations

REPORT ON THE QUALITY ASSURANCE OF ASSESSMENT OF THE DHET NOVEMBER 2016 NATED REPORT 190/191: ENGINEERING STUDIES N2 – N3 EXAMINATIONS

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EXECUTIVE SUMMARY

The General and Further Education and Training Quality Assurance Act (Act No 58 of 2001, amended in 2008) mandates Umalusi to quality assure assessments and approve the release of examination results at all exit points.

The NATED Report 190/191: Engineering Studies N2–N3 are Technical and Vocational Education and Training (TVET) programmes, registered on Umalusi's qualifications sub-framework.

Umalusi reports on its quality assurance of this national part qualification. The quality and standard of assessment is judged by adherence to policies and guidelines that are designed to deal with the critical aspects of administering credible national assessments and examinations.

In order to ensure the overall high standard and quality of examinations and assessments in the abovementioned programmes, established quality assurance processes are followed. The processes included in the November 2016 NATED Report 190/191: Engineering Studies N2–N3 examinations were as follows:

- Moderation of the November 2016 examination question papers;
- Monitoring and moderation of Internal Continuous Assessment (ICASS);
- Monitoring of the state of readiness of the Department of Higher Education and Training (DHET) to conduct, administer and manage the November 2016 examinations;
- Monitoring of the conduct of the writing and marking phases of the examinations;
- Monitoring of marker selection and appointment;
- Monitoring of marking guideline discussions;
- Verification of marking;
- Standardisation of marks according to agreed principles and procedures.

This report covers the various processes of assurance of quality of assessment implemented in 2016. Furthermore, it provides an update on the current status of the NATED Report 190/191: Engineering Studies N2–N3 certification.

The moderation of question papers is critical to the establishment of standards in assessment. The aim of such moderation is to ensure that the examination question papers are of the required standard in that they are accurate, fair, valid and reliable and in compliance with approved curriculum and examination policies. Moderation is also intended to ensure that current question papers are of a standard that is equivalent or comparable to that of previous years so that learners writing in any particular year are not unfairly advantaged or disadvantaged. The marking guidelines, designed to guide the marking process, are moderated to ensure their accuracy, fairness, validity and reliability. External moderators evaluate the quality of question papers against a set of criteria and their own individually prepared assessment frameworks.

Umalusi moderated 40 question papers set for the November 2016 examination. The number of NATED Report 190/191: Engineering Studies question papers moderated per level was:

- N2 12 of 32 subjects (38%)
- N3 24 of 27 subjects (89%)
- Business English N3 (four subjects – four question papers)

The question papers were moderated off-site between May and October 2016. Eleven question papers were approved as received, requiring only minor technical adjustments; 24 question papers and marking guidelines were approved conditionally; and five question papers and marking guidelines were rejected after the initial moderation. All 40 papers were eventually approved and signed off.

The second step in the quality assurance process was the moderation of the internal continuous assessment (ICASS), which constitutes 40% of a candidate's final mark. During November 2016, Umalusi moderated a sample of the ICASS for NATED Report 190/191: Engineering Studies N2–N3 subjects at 16 selected institutions across the country.

An improvement in meeting the criteria used for evaluation was observed. Areas of good practice were identified including, amongst others, the fact that more sites had implemented a staff training plan than in 2015; there was a 21% improvement over 2015 in the correct capturing, transcription and conversion of marks; 19% more tasks met the cognitive demand than in 2015; 13% more tasks covered a substantial amount of work and in 25% of tasks, the weighting and spread were more appropriate.

The most significant concern raised was a lack of proper implementation of the ICASS Guidelines at sites of teaching and learning. Lecturers were not making effective use of additional supporting materials, which would have made the subject more interesting and comprehensible for students, and there were lapses in the proper recording and safekeeping of students' evidence.

In addition, Umalusi's monitors and staff verified the adherence to policy and procedures in the conduct of the national examinations and in the marking processes at 42 examination centres and 11 marking centres. The state of readiness, the writing and the internal marking of examinations were monitored before and during the November 2016 examinations. Monitoring of the writing of the examinations continued throughout the NATED Report 190/191: Engineering Studies N2–N3 examination period.

Three reports of an alleged leaking of question papers were received. One of these three question papers was replaced and rescheduled. A substantial number of other irregularities were reported, including serious transgressions of the examination conduct policy at two sites. Most irregularities were confirmed during the marking process and the majority of serious irregularities were committed at private colleges.

Umalusi officials monitored the DHET processes and found that an efficient system had been followed in the recruitment and appointment of markers. Certain processes required improvement, however. Notwithstanding, an improvement in the preparation for the marking process on the part of the DHET, marking centres, markers, chief markers and internal moderators was observed. The marking centres were generally well managed.

The DHET presented a total of 59 instructional offerings for statistical moderation of the NATED Report 190/191: Engineering Studies N2 and N3 as well as four N3 Business Languages subjects. The results for 53 of these subjects were standardised. Umalusi conducted the verification of the capturing of marks, verified the historical averages and the standardisation and statistical moderation and resulting datasets.

Certification is the culmination of all the quality assurance processes, including a final examination process conducted by the assessment body. The manner in which the registration of student information, ultimately used for certification, is managed raises some concerns as it opens the way for many inaccuracies at the point of certification. The N3 certification is at a level where candidates are certificated, but the registration data may not be accurate.

There are considerable challenges facing the NATED Report 190/191: Engineering Studies N2–N3 programmes. The outdated and underspecified syllabi in particular and the implications of high enrolments for teaching and learning remain areas of serious concern. This is exacerbated by the fact that the link between theory and practical implementation is still missing. Urgent interim interventions are required to improve the curriculum, teaching and learning, and assessment in these programmes until such time that new qualifications have been developed and implemented. Work-based experience for both lecturers and students is strongly recommended.

The evidence presented to Umalusi suggests that apart from the challenges experienced during the printing and distribution of question papers, no systemic irregularities with the potential to compromise the credibility and integrity of the November 2016 NATED Report 190/191: Engineering Studies N2–N3 examinations administered by the DHET occurred. Challenges that were observed included outdated and underspecified syllabi, the leaking of three papers, group copying at some centres and poor conduct and management of assessment and examination processes at two centres.

Umalusi, in collaboration with all stakeholders, intends to continue with improvement initiatives and, through its quality assurance processes, to ensure that the quality, integrity and credibility of the NATED Report 190/191: Engineering Studies N2–N3 assessments and examinations are not only maintained but improved.

ACRONYMS AND ABBREVIATIONS

AS	Assessment standard
ASC	Assessment Standards Committee
CD: NEA	Chief Directorate: National Examinations and Assessment
CM	Chief Marker
DBE	Department of Basic Education
DCS	Department of Correctional Services
DHET	Department of Higher Education and Training
DMCM	Deputy Marking Centre Manager
EC	Eastern Cape Province
FET	Further Education and Training
FL	First Language
FS	Free State Province
FTCIP	Formal Technical College Instructional Programmes
Gau	Gauteng Province
GFETQSF	General and Further Education and Training Qualifications Sub-framework
GPW	Government Printing Works
HEIs	Higher Education Institutions
HOD	Head of Department
KZN	KwaZulu-Natal Province
ICASS	Internal Continuous Assessment
IM	Internal Moderator
IT	Information Technology
LO	Learning Outcome
Lim	Limpopo Province
MCM	Marking Centre Manager

Mpu	Mpumalanga Province
NATED	National Education
NC	Northern Cape Province
NQF	National Qualifications Framework
NSC	National Senior Certificate
NW	North West Province
OHS	Occupational Health and Safety
PAM	Personnel Administrative Measures
PoA	Portfolio of Assessment (lecturer portfolio)
PoE	Portfolio of Evidence (learner portfolio)
SACE	South African Council for Educators
SAGs	Subject and Assessment Guidelines
SITA	State Information Technology Agency
SL	Second Language
SME	Subject Matter Expert
SO	Subject Outcome
SOR	State of Readiness
SoR	Statement of Results
STD	Senior Teacher's Diploma
TVET	Technical and Vocational Education and Training
Umalusi	Council for Quality Assurance in General and Further Education and Training
WBE	Work-based experience
WC	Western Cape Province

LIST OF TABLES AND GRAPHS

CHAPTER 1: MODERATION OF QUESTION PAPERS

1.1 Introduction and Purpose

The November 2016 NATED Report 190/191: Engineering Studies examination is one of three annual summative assessments that are conducted in the Technical Vocational Education and Training (TVET) sector. The question papers for the November 2016 examinations were set nationally and moderated internally by examiners and moderators appointed by the Department of Higher Education and Training (DHET). These question papers were used in examinations conducted at public TVET colleges, private colleges, correctional services centres and schools. Umalusi moderated a sample of the N2 and N3 question papers.

Umalusi appointed external moderators, all of whom were subject matter experts from TVET colleges, provincial education departments and universities of technology. These moderators assured the quality of a sample of NATED N2 and N3 question papers and marking guidelines. They evaluated the question papers and marking guidelines according to the extent to which these adhered to set criteria. (See Table 1B, which outlines the moderation criteria.)

The purpose of this chapter is to:

- Define the sample size in terms of subjects moderated in preparation for the November 2016 examinations;
- Provide an overview of the essential findings related to the standard and quality of the externally moderated question papers;
- Highlight areas of good practice;
- Identify issues of concern; and
- Propose directives for improvement and compliance.

1.2 Scope and Approach

Umalusi used a team of specially appointed moderators to moderate a sample of 40 of the NATED N2 and N3 question papers and marking guidelines: 12 question papers and marking guidelines at N2 level and 28 question papers and marking guidelines at N3 level. Apart from the fundamental Engineering subjects, Mathematics, Science subjects and Drawing subjects, the sample included all the N2 and N3 subjects with high enrolments. At N3 level, the question papers in Business English (First and Second Language) were also included in the sample. The subjects included in the moderated sample are listed in Table 1A.

Table 1A: Subjects included in the moderated sample of question papers

Subject	Level
Building and Civil Technology	N3
Building Drawing	N2, N3
Building Science	N2, N3
Business English First Language Paper 1	N3
Business English First Language Paper 2	N3
Business English Second Language Paper 1	N3
Business English Second Language Paper 2	N3
Diesel Trade Theory	N2, N3
Electrical Trade Theory	N3
Electro-technology	N3
Engineering Drawing	N2, N3
Engineering Science	N2, N3
Fitting and Machining Theory	N2
Industrial Electronics	N2, N3
Industrial Organisation and Planning	N3
Industrial Orientation	N3
Instrument Trade Theory	N3
Logic Systems	N3
Mathematics	N2, N3
Mechanotechnology	N3
Motor Trade Theory	N2, N3
Plant Operation Theory	N3
Platers' Theory	N2
Plating and Structural Steel Drawing	N2, N3
Radio and Television Theory	N3
Refrigeration Technology	N3
Refrigeration Trade Theory	N3
Supervision in Industry	N3
Waste-water Treatment Practice	N3
Water and Waste-water Treatment Practice	N2
Water Treatment Practice	N3

The moderation process followed an off-site approach, according to which question papers, marking guidelines, assessment grids and the internal moderators' reports from the DHET were sent to the external moderators. The question papers were finalised after consensus had been reached on proposed changes, corrections and improvements. Finally, the question papers and accompanying documentation were returned to the external moderators for approval and signing off.

The question papers and marking guidelines were moderated according to nine criteria and detailed quality indicators, which are outlined in Table 1B below.

Table 1B: Moderation criteria

Criteria	Quality indicators
Technical criteria	The general layout, format and structure of the question paper, correct page numbering, mark allocation in the question paper, marking guideline and the quality of illustrations, graphs, tables, etc.
Internal moderation	The quality, standard and relevance of the internal moderator's report and the extent to which its recommendations are addressed and implemented.
Content coverage	The extent to which the question papers cover the syllabus in terms of prescribed weighting, spread, linking and integration of different topics and the extent to which the examination questions represent the latest developments in the subject field(s).
Types and quality of examination questions	The variety and overall quality of questions, the correlation among mark allocation, level of difficulty and time allocation, the formulation of questions and instructions.
Cognitive skills	The distribution of questions in terms of cognitive levels (according to Bloom's Taxonomy, for example), the extent to which the question paper allows for the assessment of the candidate's ability to reason, communicate, translate from verbal to symbolic, compare and contrast, identify causal relationships and to express an argument clearly.
Marking guideline	The overall layout of the marking guideline, the correspondence between the marking guideline and the question paper (in terms of questions and mark allocation), the accuracy of answers in the marking guideline and the extent to which the marking guideline will facilitate the marking process.
Language and bias	The correct use of subject terminology, the use of the appropriate language register, the complexity of vocabulary in view of candidates' language ability, the use of grammatically correct language in both the question paper and the marking guideline and the extent to which the question paper is free from stereotyping and bias when dealing with issues such as culture, gender, race, religion.
Predictability	The degree of innovation in the question paper and the extent to which the question paper contains questions taken from question papers from the past three years.
Overall impression	The degree to which the question paper aligns with the current syllabus, the extent to which the question paper assesses the outcomes of this syllabus, the standard of the question paper compared to examinations from previous years and the proportion of questions that assess skills, knowledge, attitudes, values and reasoning.

1.3 Summary of Findings

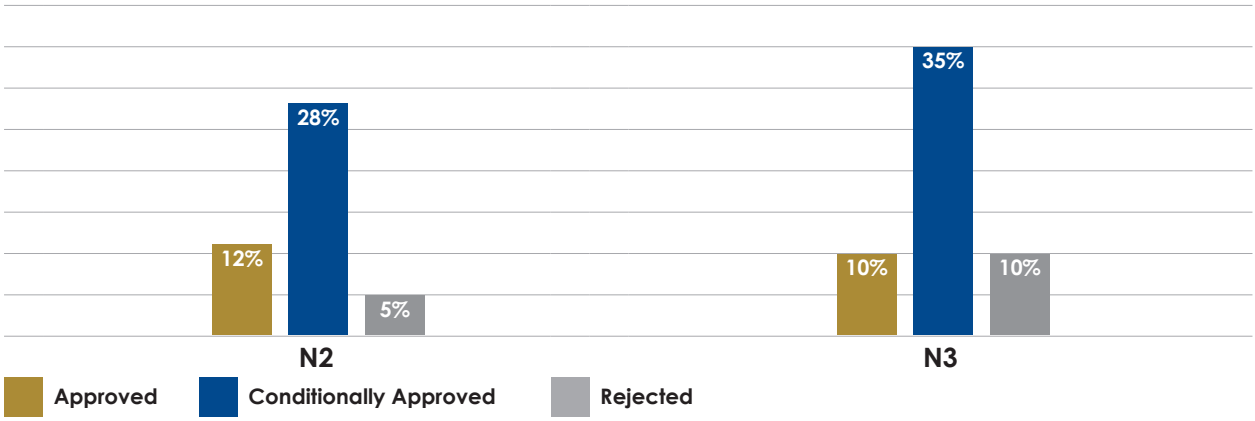
The internal moderators from the DHET and the external moderators from Umalusi cooperated in finalising the question papers and the marking guidelines.

After the initial moderation process, the status of the 40 question papers and marking guidelines was as follows:

- Three question papers were print ready, but for only two of these the marking guidelines were also print ready;
- Eight question papers were approved, but required minor technical adjustments;
- Twenty-four question papers and marking guidelines were approved conditionally;
- Five question papers and marking guidelines were rejected and had to be reset and resubmitted for internal and external moderation.

The graph and table below provide a summary of the findings of the initial moderation of question papers, as captured in the external moderators' reports.

Graph 1A: Approval status of NATED Report 190/191: Engineering Studies question papers after initial moderation



Tables 1C and 1D summarises the status of the NATED question papers and the marking guidelines after the initial moderation – i.e. before the external moderator made contact with the internal moderator.

Table 1C: Status of questions papers after initial moderation

Status after initial moderation	Subjects concerned
Approved: **Print ready**	Building Science N2, N3 Diesel Trade Theory N2 Industrial Orientation N3 Logic Systems N3 Motor Trade Theory N3 Refrigeration Technology N3 Refrigeration Trade Theory N3
Approved: **Minor technical adjustments required**	Building and Civil Technology N3 Industrial Electronics N2, N3 Platers' Theory N2 Plating and Structural Steel Drawing N2, N3 Radio and Television Theory N3 Supervision in Industry N3
Conditionally approved: **Question/s to be restructured/rephrased**	Building Drawing N3 Engineering Drawing N2, N3 Motor Trade Theory N2 Waste-water Treatment Practice N3 Water and Waste-water Treatment Practice N2
Conditionally approved: **Question/s to be replaced**	Engineering Science N2, N3 Industrial Organisation and Planning N3 Water Treatment Practice N3
Conditionally approved: **Question/s to be restructured/rephrased/replaced**	Building Drawing N2 Business English First Language N3 Paper 1, 2 Business English Second Language N3 Paper 1, 2 Diesel Trade Theory N3 Electrical Trade Theory N3 Electro-technology N3 Fitting and Machining Theory N2 Instrument Trade Theory N3 Mathematics N2, N3 Mechanotechnology N3 Plant Operation Theory N3
Rejected: **Question paper to be reset and resubmitted for internal and external moderation**	Diesel Trade Theory N2 Industrial Orientation N3 Motor Trade Theory N3 Refrigeration Technology N3 Refrigeration Trade Theory N3

Table 1D: Status of marking guidelines after initial moderation

Status after initial moderation	Subjects concerned
Approved: **Print ready**	Building Science N2, N3
Approved: **Minor technical adjustments required**	Building and Civil Technology N3 Industrial Electronics N2, N3 Logic Systems N3 Plater's Theory N2 Plating and Structural Steel Drawing N2, N3 Radio and Television Theory N3 Supervision in Industry N3
Conditionally approved: **Question/s to be restructured/rephrased**	Building Drawing N2, N3 Business English Second Language N3 Paper 1 Electrical Trade Theory N3 Electro-technology N3 Engineering Drawing N2, N3 Fitting and Machining Theory N2 Mechanotechnology N3 Motor Trade Theory N2 Plant Operation Theory N3 Waste-water Treatment Practice N3 Water and Waste-water Treatment Practice N2
Conditionally approved: **Question/s to be replaced**	Business English First Language N3 Paper 1,2 Business English Second Language N3 Paper 2 Diesel Trade Theory N3 Engineering Science N2, N3 Industrial Organisation and Planning N3 Instrument Trade Theory N3 Mathematics N2, N3 Water Treatment Practice N3
Rejected: **Question paper to be reset and resubmitted for internal and external moderation**	Diesel Trade Theory N2 Industrial Orientation N3 Motor Trade Theory N3 Refrigeration Technology N3 Refrigeration Trade Theory N3

Table 1E provides a summary of the most important findings and challenges involved in the moderation of the November 2016 examination question papers. All findings are indicated in terms of the sample of subjects (40) moderated.

Table 1E: Findings: Moderation of November 2016 question papers

Criteria and findings	Challenges	Subjects concerned
Technical Criteria		
Almost all the question papers (95%) were complete, with the relevant answer sheets, addenda and formula sheets where applicable. The external moderators received all question papers and marking guidelines, although this was not the case with the accompanying documentation (i.e. the moderators' reports and/or the assessment grids). In one subject, the external moderator reported that no evidence of internal moderation had been received from the assessment body. The layout of all N2 and N3 question papers was well organised, reader-friendly and, with one exception, the page numbering was correct. Although there were a few exceptions, it was possible to conclude that the question paper was of a high quality in terms of layout, use of the correct font, page and question numbering and the consistent application of headers and footers. Based on the information in the external moderators' reports, the quality of illustrations, graphs and tables was less than adequate, however. Although mark allocations were correctly indicated in most subjects, some external moderators reported on the inflation of marks. The mark allocation in some question papers did not correspond with that in the marking guideline. Although three exceptions were reported, the question papers did adhere to the format requirements.	External moderators received the question papers and marking guidelines, but not the internal moderators' reports and/or the assessment grids.	Business English First Language N3 Paper 2 Engineering Drawing N2 Industrial Electronics N2, N3 Motor Trade Theory N3 Refrigeration Trade Theory N3 Waste-water Treatment Practice N3
	Only two questions papers (5%) were incomplete – the answer sheets, addenda or formula sheets were missing.	Engineering Drawing N3 Water Treatment Practice N3
	There were five question papers (13%) in which the cover pages did not include all the required information. In one subject, the mark total of the question paper had been incorrectly recorded on the cover page.	Business English First Language N3 Paper 1, 2 Plating and Structural Steel Drawing N3 Water and Waste-water Treatment Practice N2 Water Treatment Practice N3
	In seven question papers (18%), the instructions to candidates were not clearly specified according to DHET specifications. These question papers contained questions that were vague and ambiguous or had words missing; they had to be corrected or rephrased.	Building Drawing N2, N3 Business English First Language N3 Paper 1, 2 Diesel Trade Theory N3 Mechanotechnology N3 Motor Trade Theory N2
	There was only one (3%) N3 question paper in which the page numbering required corrections.	Mathematics N3
	In one question paper (3%) the questions were not correctly numbered.	Plating and Structural Steel Drawing N3
	In two question papers (5%) the headers and footers in the question paper were not consistent.	Mathematics N3 Plant Operation Theory N3
	Five question papers (6%) were reported for not consistently using the prescribed font: single questions and labels and/or drawings were typed in a font other than the one stipulated.	Diesel Trade Theory N3 Mathematics N2 Motor Trade Theory N2 Plant Operation Theory N3 Water Treatment Practice N3

Criteria and findings	Challenges	Subjects concerned
Technical Criteria		
Almost all the question papers (95%) were complete, with the relevant answer sheets, addenda and formula sheets where applicable.	There were four question papers (10%) in which the mark allocation was not correctly or clearly indicated, or where the allocation was confusing.	Diesel Trade Theory N3 Industrial Electronics N2 Motor Trade Theory N3 Plating and Structural Steel Drawing N2 Water and Waste-water Treatment Practice N2
	Candidates would not have been able to complete the question paper in the time allocated in one case (3%).	Mathematics N3
	In seven (18%) question papers the mark allocation for some questions did not correspond to that in the marking guidelines.	Business English First Language N3 Paper 2 Diesel Trade Theory N2 Motor Trade Theory N3 Plant Operation Theory N3 Plating and Structural Steel Drawing N2 Water and Waste-water Treatment Practice N2 Water Treatment Practice N3
	The external moderators reported on the poor quality of illustrations, figures, graphs and tables in 11(28%) question papers.	Building Drawing N3 Diesel Trade Theory N2 Electro-technology N3 Engineering Drawing N2, N3 Instrument Trade Theory N3 Mathematics N2 Motor Trade Theory N2, N3 Refrigeration Technology N3 Water Treatment Practice N3
	Three (8%) question papers did not adhere to the format requirements of the syllabus.	Business English First Language N3 Paper 1, 2 Refrigeration Trade Theory N3
Internal Moderation		
Overall, the internal moderators' reports did not meet the required standard, quality or relevance of content. Some marking guidelines did not correspond with the question papers, and marking guidelines did not all include mark allocations for sub-sections in questions.	There were ten subjects (25%) in which problems in the internal moderators' reports were reported. The reports were either incomplete or Umalusi did not receive the reports from the DHET.	Business English Second Language N3 Paper 1, 2 Fitting and Machining Theory N2 Industrial Electronics N2 Mathematics N2 Motor Trade Theory N3 Plant Operation Theory N3 Refrigeration Trade Theory N3 Waste-water Treatment Practice N3 Water and Waste-water Treatment Practice N2

Criteria and findings	Challenges	Subjects concerned
Internal Moderation		
In several subjects, there was no evidence that the internal moderation had actually been conducted or that the internal moderator's recommendations had been addressed or implemented.	Eight (20%) internal moderators' reports were of unacceptable quality.	Diesel Trade Theory N2 Engineering Drawing N2 Fitting and Machining Theory N2 Motor Trade Theory N2, N3 Plant Operation Theory N3 Waste-water Treatment Practice N3 Water and Waste-water Treatment Practice N2
	Sixteen internal moderators' reports (40%) did not meet the required standard.	Business English First Language N3 Paper 1 Business English Second Language N3 Paper 1, 2 Diesel Trade Theory N2, N3 Engineering Drawing N2 Fitting and Machining Theory N2 Industrial Organisation and Planning N3 Mathematics N2, N3 Mechanotechnology N3 Motor Trade Theory N3 Plant Operation Theory N3 Refrigeration Technology N3 Waste-water Treatment Practice N3 Water and Waste-water Treatment Practice N2
	In 16 (40%) of the internal moderators' reports, some information was irrelevant or some relevant information had not been included.	Building Drawing N3 Business English First Language N3 Paper 1 Business English Second Language N3 Paper 1, 2 Diesel Trade Theory N2, N3 Engineering Drawing N2 Fitting and Machining Theory N2 Industrial Organisation and Planning N3 Mathematics N2, N3 Mechanotechnology N3 Motor Trade Theory N3 Plant Operation Theory N3 Refrigeration Technology N3 Waste-water Treatment Practice N3
	There was no evidence that the internal moderators' recommendations had been addressed or implemented in 15 subjects (37.5%).	Business English First Language N3 Paper 1, 2 Business English Second Language N3 Paper 1, 2 Electrical Trade Theory N3 Electro-technology N3 Engineering Drawing N2 Fitting and Machining Theory N2

Criteria and findings	Challenges	Subjects concerned
Internal Moderation		
In several subjects, there was no evidence that the internal moderation had actually been conducted or that the internal moderator's recommendations had been addressed or implemented.		Industrial Organisation and Planning N3 Mathematics N2 Motor Trade Theory N2, N3 Plant Operation Theory N3 Refrigeration Technology N3 Waste-water Treatment Practice N3
Content Coverage		
The external moderators reported that not all question papers complied fully with the criteria for content coverage.	There were eight question papers (20%) that did not cover the syllabus adequately.	Business English First Language N3 Paper 1 Diesel Trade Theory N2, N3 Mathematics N3 Motor Trade Theory N3 Refrigeration Technology N3 Refrigeration Trade Theory N3 Water Treatment Practice N3
	In seven (18%) question papers some of the questions did not fall within the broad scope of the syllabus.	Business English First Language N3 Paper 1 Electrical Trade Theory N3 Instrument Trade Theory N3 Mathematics N2, N3 Refrigeration Technology N3 Refrigeration Trade Theory N3
	Six N3 question papers (15%) did not meet the criteria for content coverage as far as the prescribed weighting was concerned.	Business English First Language N3 Paper 1 Business English Second Language N3 Paper 2 Mathematics N3 Motor Trade Theory N3 Refrigeration Technology N3 Refrigeration Trade Theory N3
	Seven question papers (18%) did not demonstrate a wide enough spread of topics.	Business English First Language N3 Paper 1, 2 Diesel Trade Theory N2, N3 Mathematics N2, N3 Refrigeration Technology N3
	There was no integration of topics in five question papers (13%).	Diesel Trade Theory N2, N3 Mathematics N2, N3 Refrigeration Trade Theory N3
	Five question papers (13%) were not representative of the latest developments in the subject.	Diesel Trade Theory N2, N3 Industrial Organisation and Planning N3 Mathematics N3 Refrigeration Trade Theory N3

Criteria and findings	Challenges	Subjects concerned
Types and Quality of Questions		
Although most question papers included a variety of question types, some did not allow for creative responses. **Some question papers did not demonstrate a correlation among mark allocation, level of difficulty and time allocation.**	Six question papers (15%) did not include a variety of question types. The external moderators reported that these papers comprised mainly content knowledge based questions.	Diesel Trade Theory N2, N3 Mathematics N2, N3 Motor Trade Theory N2 Refrigeration Trade Theory N3
	In 12 question papers (30%), the questions did not demonstrate correlations among mark allocation, level of difficulty and time allocation.	Business English First Language N3 Paper 1, 2 Business English Second Language N3 Paper 1, 2 Diesel Trade Theory N2, N3 Electrical Trade Theory N3 Instrument Trade Theory N3 Mathematics N3 Refrigeration Technology N3 Refrigeration Trade Theory N3 Water Treatment Practice N3
	Only three question papers (8%) contained questions that did not relate to what was important to the subject.	Mathematics N2 Refrigeration Technology N3 Refrigeration Trade Theory N3
	Sixteen question papers (40%) contained vaguely defined problems, ambiguous wording, irrelevant information and/or unintentional clues to answers.	Business English First Language N3 Paper 1, 2 Business English Second Language N3 Paper 1, 2 Electro-technology N3 Engineering Science N2 Fitting and Machining Theory N2 Instrument Trade Theory N3 Mathematics N2, N3 Plant Operation Theory N3 Plating and Structural Steel Drawing N3 Refrigeration Technology N3 Waste-water Treatment Practice N3 Water and Waste-water Treatment Practice N2 Water Treatment Practice N3
	Some questions in nine question papers (23%) did not provide clear instructional keywords/ verbs.	Business English First Language N3 Paper 1, 2 Diesel Trade Theory N2, N3 Engineering Drawing N2 Industrial Orientation N3 Mathematics N2 Mechanotechnology N3 Refrigeration Trade Theory N3

Criteria and findings	Challenges	Subjects concerned
Types and Quality of Questions		
Although most question papers included a variety of question types, some did not allow for creative responses. **Some question papers did not demonstrate a correlation among mark allocation, level of difficulty and time allocation.**	Six question papers (15%) contained questions that did not provide sufficient information to elicit an appropriate response from candidates.	Business English First Language N3 Paper 1 Business English Second Language N3 Paper 1 Diesel Trade Theory N2 Engineering Drawing N2 Mathematics N2, N3
	Twelve question papers (30%) contained factual errors or misleading information.	Building and Civil Technology N3 Building Drawing N2 Business English First Language N3 Paper 1, 2 Business English Second Language N3 Paper 1 Instrument Trade Theory N3 Mathematics N3 Mechanotechnology N3 Plater's Theory N2 Plating and Structural Steel Drawing N3 Waste-water Treatment Practice N3 Water Treatment Practice N3
	Only two question papers (5%) contained questions featuring double negatives or unnecessarily negative terms.	Industrial Electronics N3 Mathematics N2
	Some references to visuals, drawings, illustrations, tables or graphs in four question papers (10%) were irrelevant or incorrect.	Diesel Trade Theory N2 Electro-technology N3 Mathematics N2 Refrigeration Trade Theory N3
Cognitive Skills		
Some external moderators did not receive the analysis grid, or received it late. External moderators also reported that the analysis grid did not indicate clearly the cognitive level of each question in the paper. **Some question papers did not demonstrate the appropriate distribution of the cognitive levels and opportunities to assess the candidates' essential abilities.** **Some question papers were not representative of the latest developments in teaching the subject – most often because of outdated syllabi.**	In eight question papers (20%), the assessment grids were not received or did not clearly indicate the level of each question and/or sub-question.	Business English Second Language N3 Paper 1, 2 Diesel Trade Theory N2 Engineering Drawing N2 Fitting and Machining Theory N2 Industrial Organisation and Planning N3 Motor Trade Theory N3 Refrigeration Trade Theory N3
	The cognitive levels were not appropriately distributed in six question papers (15%).	Diesel Trade Theory N2 Industrial Organisation and Planning N3 Mathematics N2, N3 Motor Trade Theory N3 Refrigeration Trade Theory N3
	The questions in five question papers (13%) were not representative of the latest developments in teaching in the particular subject field.	Diesel Trade Theory N2, N3 Industrial Organisation and Planning N3 Motor Trade Theory N3 Refrigeration Trade Theory N3

Criteria and findings	Challenges	Subjects concerned
Marking Guidelines		
In general, marking guidelines were neatly typed and, with the exception of one, clearly laid out. **Apart from questions in the marking guideline not corresponding to those in the question paper, there were numerous marking guidelines that did not provide accurate answers to questions.** **The marking guidelines did not allow for alternative responses in many instances and several external moderators reported on the fact that more alternatives or additional options should be included for open-ended questions.** **There were problems with the mark allocation and distribution within each question in the marking guideline. Several external moderators reported that marks were inflated and that there was no indication of mark distribution within questions.** **Based on the information in the external moderators' reports, it was agreed that not all marking guidelines would facilitate the marking exercise.**	In three question papers (8%) some questions in the marking guideline did not correspond to those in the question paper, or the marking guideline required adjustment to reflect the external moderator's changes to the question paper.	Motor Trade Theory N3 Plating and Structural Steel Drawing N2, N3
	Some answers in 17 marking guidelines (43%) were inaccurate, or contained errors.	Building Drawing N3 Business English First Language N3 Paper 2 Business English Second Language N3 Paper 1, 2 Engineering Drawing N2, N3 Engineering Science N2 Instrument Trade Theory N3 Mathematics N2, N3 Mechanotechnology N3 Motor Trade Theory N3 Plater's Theory N2 Plating and Structural Steel Drawing N2, N3 Refrigeration Trade Theory N3 Water Treatment Practice N3
	Fourteen marking guidelines (35%) did not allow for alternative responses (where these were possible).	Building and Civil Technology N3 Business English First Language N3 Paper 1, 2 Business English Second Language N3 Paper 1, 2 Diesel Trade Theory N2, N3 Industrial Electronics N2 Industrial Orientation N3 Instrument Trade Theory N3 Mathematics N2 Mechanotechnology N3 Motor Trade Theory N3 Plant Operation Theory N3
	In one question paper (3%), the marking guideline was not neatly typed.	Mathematics N2
	In nine marking guidelines (23%) the mark allocation differed from that in the question paper.	Business English First Language N3 Paper 2 Business English Second Language N3 Paper 1, 2 Diesel Trade Theory N2 Mathematics N3 Plating and Structural Steel Drawing N2 Refrigeration Technology N3

Criteria and findings	Challenges	Subjects concerned
Marking Guidelines		
In general, marking guidelines were neatly typed and, with the exception of one, clearly laid out.		Water and Waste-water Treatment Practice N2 Water Treatment Practice N3
	The mark allocation and the distribution within the questions were not clearly stipulated in 12 of the marking guidelines (30%).	Building and Civil Technology N3 Business English First Language N3 Paper 1 Business English Second Language N3 Paper 1 Electrical Trade Theory N3 Engineering Drawing N3 Fitting and Machining Theory N2 Industrial Electronics N3 Instrument Trade Theory N3 Mathematics N2 Plating and Structural Steel Drawing N2 Radio and Television Theory N3 Water and Waste-water Treatment Practice N2
	Twelve of the marking guidelines (30%) would not have facilitated the marking process.	Building Drawing N2 Building and Civil Technology N3 Business English First Language N3 Paper 1, 2 Business English Second Language N3 Paper 1 Fitting and Machining Theory N2 Mathematics N2 Motor Trade Theory N3 Plating and Structural Steel Drawing N2, N3 Supervision in Industry N3 Water Treatment Practice N3
Language and Bias		
Subject terminology was used correctly. **Although the subject terminology was generally used correctly, there were question papers and marking guidelines that did not meet the criteria of correct grammar and simple syntax.** **No question papers showed evidence of stereotyping or bias concerning culture, gender, language, politics, race or religion.**	A question in each of two question papers (5%) reflected an incorrect use of (subject) terminology.	Business English First Language N3 Paper 1 Mathematics N2
	The grammar in four question papers (10%) contained subtleties that could have confused candidates.	Business English First Language N3 Paper 1, 2 Engineering Drawing N2 Fitting and Machining Theory N2
	Grammatical errors occurred in eight question papers (20%).	Business English First Language N3 Paper 2 Business English Second Language N3 Paper 1, 2 Diesel Trade Theory N2, N3 Engineering Science N3 Fitting and Machining Theory N2 Instrument Trade Theory N3

Criteria and findings	Challenges	Subjects concerned
Language and Bias		
Subject terminology was used correctly.	Grammatical errors that required correcting occurred in the marking guidelines for three question papers (8%).	Business English First Language N3 Paper 2 Business English Second Language N3 Paper 2 Fitting and Machining Theory N2
	Four question papers (10%) contained questions phrased in complex syntax.	Business English First Language N3 Paper 1 Diesel Trade Theory N2, N3 Electro-technology N3
Predictability		
Some question papers were predictable as examiners had included questions from previous examination papers. There was a lack of innovation in some of the question papers.	Ten question papers (25%) contained questions that could easily have been predicted, because similar questions had been used in previous question papers.	Diesel Trade Theory N2 Electrical Trade Theory N3 Industrial Orientation N3 Instrument Trade Theory N3 Logic Systems N3 Mathematics N2, N3 Motor Trade Theory N2, N3 Refrigeration Technology N3
	Ten question papers (40%) contained questions repeated verbatim from the past three years' question papers.	Diesel Trade Theory N2 Electrical Trade Theory N3 Engineering Science N2, N3 Industrial Organisation and Planning N3 Industrial Orientation N3 Instrument Trade Theory N3 Mathematics N3 Motor Trade Theory N3 Refrigeration Technology N3
	An appropriate degree of innovation was not demonstrated in eight question papers (20%).	Diesel Trade Theory N2, N3 Industrial Orientation N3 Mathematics N2, N3 Motor Trade Theory N3 Refrigeration Technology N3 Refrigeration Trade Theory N3
Overall Impression		
In spite of the flaws indicated in the above sections, the impression of the majority of external moderators was that question papers were of an acceptable standard.	Four question papers (10%) were not aligned with the current syllabus.	Business English First Language N3 Paper 1 Mathematics N2 Refrigeration Technology N3 Refrigeration Trade Theory N3
	Four question papers (10%) did not, on the whole, assess the broad outcomes of the syllabus.	Business English First Language N3 Paper 1 Mathematics N2 Refrigeration Technology N3 Refrigeration Trade Theory N3
	Eleven question papers (28%) were not of the appropriate standard.	Business English First Language N3 Paper 1, 2 Diesel Trade Theory N2, N3

Criteria and findings	Challenges	Subjects concerned
Overall Impression		
In spite of the flaws indicated in the above sections, the impression of the majority of external moderators was that question papers were of an acceptable standard.		Electrical Trade Theory N3 Industrial Orientation N3 Mathematics N2, N3 Motor Trade Theory N3 Refrigeration Technology N3 Refrigeration Trade Theory N3
	The standard of eight question papers (20%) did not compare favourably to that of previous years.	Business English First Language N3 Paper 1, 2 Diesel Trade Theory N2, N3 Electrical Trade Theory N3 Industrial Orientation N3 Mathematics N2 Motor Trade Theory N3
	Three question papers (8%) were not of the same standard as those of the previous cycle.	Business English First Language N3 Paper 2 Diesel Trade Theory N3 Electrical Trade Theory N3

1.4 Areas of Good Practice

Notwithstanding a small number of exceptions, the following areas of good practice were identified:

- Question papers complied with the technical criteria, in that they were well organised and reader-friendly, with the instructions to candidates clearly explained according to DHET specifications.
- Eighty percent of the externally moderated question papers covered the syllabus adequately and the questions were within the broad scope of the syllabus.
- The question papers were up to standard in terms of the language used. Subject terminology was used correctly, the level and complexity of the vocabulary were appropriate to the language ability of the candidates and the wording of the question papers and marking guidelines was grammatically correct.
- All moderated question papers, without exception, met the criterion of being free from any evidence of stereotyping or bias when referring to culture, gender, language, political, race and religion.

1.5 Areas of Concern

Based on the findings from the external moderators' reports, the following areas of concern were noted:

- In spite of the fact that most question papers complied with the technical criteria, the quality of illustrations, drawings and graphs was not up to standard in all cases.

- The internal moderators' reports were not up to standard. In three subjects (8%), these reports were not received at the same time as the question paper and marking guidelines. Furthermore, in ten subjects (25%), the internal moderators did not identify all errors and discrepancies in questions and mark allocations, creating the impression that the papers were correct and print ready, which was not the case. An additional concern was the fact that the internal moderators did not provide the examiners with feedback or recommendations.
- The analysis grid was reported as problematic. Three external moderators (8%) received the assessment grid after they had completed the moderation and a further two (5%) did not receive the assessment grid at all. In two subjects (5%), it was reported that the analysis grid did not match the question paper or the marking guideline.
- As pointed out in Section 1.4 (Areas of good practice), the question papers covered the syllabus adequately. However, not all question papers were representative of the latest developments in the subject field; this was in most cases the result of outdated syllabi (e.g. Diesel Trade Theory N2, N3 and Industrial Organisation and Planning N3).
- Forty-three percent of the marking guidelines contained errors and/or inaccuracies: errors and discrepancies in mark allocation and mark distribution, marks not broken down to accommodate sub-sections of questions and differences between the marking guideline and the question paper.
- Forty percent of the question papers contained questions from earlier examination papers. In some cases, these questions had been used in the previous three examinations. Some questions were very similar to those in previous examination papers. Thus the predictability of examination papers remains an area for concern.

1.6 Directives for Compliance and Improvement

Based on the identified areas of concern, the following directives are made for compliance or improvement. The DHET should:

- Develop Subject and Assessment Guidelines (SAGs) for the assessment of the NATED Report 191/190: Engineering Studies programme.
- Ensure that the question papers, marking guidelines and supporting documentation (assessment grids and internal moderators' reports) are submitted at the same time and on time, so as to avoid delays in the external moderation process.
- Ensure continued improvement in the quality of the question papers and marking guidelines and provide the examiners with comprehensive feedback to address the following:
  - The importance of examiners to be innovative when setting question papers: avoid repeating the style, pattern and format of questions, making it easy for candidates to "spot" or predict examination questions;
  - The examiner and the internal moderator should ensure that answers in the marking guideline are correct;

- Detailed breakdown of marks for questions and sub-sections of questions in the marking guidelines to facilitate accurate marking;
- Provision for alternative responses from the candidate, where applicable in the marking guidelines.

• Pay greater attention to the quality of drawings, graphs and figures.

1.7 Conclusion

Based on the external moderators' findings and feedback, it can be concluded that the overall standard of the moderated sample of the November 2016 question papers was acceptable. Although a number of question papers were not received in print ready form, the question papers were considered to be of an acceptable standard overall.

Outdated syllabi should be revised by the relevant unit of the DHET to ensure that future question papers are representative of the latest developments in the subject fields.

CHAPTER 2: MODERATION OF THE CONDUCT OF INTERNAL CONTINUOUS ASSESSMENT

2.1 Introduction and Purpose

Umalusi has been monitoring and moderating the internal assessments of selected NATED Report 190/191: Engineering Studies N2 and N3 subjects since 2012. The main objectives of this monitoring and moderation are to:

- Ascertain the appropriateness and standard of the assessment tasks; and
- Ensure that the internal assessment component of the NATED Report 190/191: Engineering Studies programme, as well as the quality assurance of this component is effectively managed.

This year, the evaluation was based on reports submitted by Umalusi's external moderators after their visits to selected sites at which they conducted interviews, made observations and scrutinised documentary evidence.

The purpose of this section of the report is to:

- Outline the approach followed in the November 2016 monitoring and moderation of internal assessment;
- Provide an indication of the sample size, that is, the sites and subjects included in the quality assurance of the internal assessment exercise;
- Provide an overview of crucial findings related to the quality and standard of internal assessment;
- Highlight areas of good practice and those where improvement is required; and
- Include recommendations which, once implemented, will enhance the quality of internal assessment.

2.2 Scope and Approach

During November 2016, external moderators monitored the implementation of internal assessment in a sample of 16 NATED Report 190/191: Engineering Studies subjects as well as Business English N3 at 16 sites. A team of 16 external moderators was employed by Umalusi to undertake the monitoring/moderation across public and private colleges in seven provinces. The reasons for selecting sites include high enrolments of candidates in a specific subject at a specific site, reported problems regarding the internal assessment of the subject at the site and the selection of a site in a different province from the previous visit.

The table below indicates the sites and the subjects included in the process.

Table 2A: Moderation of NATED internal assessment – November 2016

Subject	College	Site
Building Science N2	Lovedale TVET College	Zwelitsha Campus
Business English N3	Khomanani Business College	Johannesburg
Diesel Trade Theory N2	Umgungundlovu TVET College	Midlands Campus
Electrical Trade Theory N3	City View Business College	Johannesburg
Electro-technology N3	JFA Square Technical Training College	Johannesburg
Engineering Drawing N3	Flavius Mareka TVET College	Sasolburg Campus
Engineering Science N3	Crane International Academy	Witbank
Fitting and Machining Theory N2	Maluti TVET College	Itemoheleng Campus
Industrial Electronics N3	Gateway City College (Pty) Ltd	Durban
Industrial Orientation N3	Sandton Technical College	Pretoria
Mathematics N2	Northern Cape Urban College	City Campus
Mathematics N3	Tshwane City College	Pretoria
Mechanotechnology N3	Maluti TVET College	Itemoheleng Campus
Motor Trade Theory N2	Northlink TVET College	Bellville Campus
Plant Operation Theory N3	Damelin	Mowbray
Plating and Structural Steel Drawing N3	Coastal KZN TVET College	Swinton Campus
Water Treatment Practice N3	Johannesburg Institute of Engineering and Technology	Johannesburg

In addition, moderators were requested to gather information on three subjects, namely Mathematics N3, Engineering Science N3 and Industrial Electronics N3. The colleges/campuses were not informed prior to the visits of this additional monitoring of subjects. This prevented window-dressing of the tasks and all accompanying documents.

The DHET, colleges and campuses were informed in writing in advance of Umalusi's moderation visits.

2.3 Summary of Findings

The following section presents the finding of the monitoring of the implementation of internal assessment. The concern remains that in cases where shortcomings were observed effective delivery of the NATED N2–N3 programmes may have been hampered.

2.3.1 Enrolments

Enrolment figures were supplied by the DHET and when compared with the actual students on site, it was found that these figures did not always correspond to the actual numbers enrolled. The following table indicates the discrepancies between enrolment numbers, that were received from the DHET and the actual numbers at colleges:

Table 2B: Moderation of NATED internal assessment – November 2016

Subject	Site	DHET	Site
Building Science N2	Zwelitsha Campus	51	56
Business English N3	Khomanani Business College	715	432
Diesel Trade Theory N2	Midlands Campus	30	28
Electrical Trade Theory N3	City View Business College	4	5
Electro-technology N3	JFA Square Technical Training College	47	44
Engineering Drawing N3	Sasolburg Campus	82	64
Engineering Science N3	Crane International Academy	150	90
Fitting and Machining Theory N2	Itemoheleng Campus	30	32
Industrial Electronics N3	Gateway City College (PTY) LTD	14	38
Industrial Orientation N3	Sandton Technical College	25	11
Mathematics N2	City Campus	225	184
Mathematics N3	Tshwane City College	118	54
Mechanotechnology N3	Itemoheleng Campus	42	34
Motor Trade Theory N2	Bellville Campus	23	8
Plant Operation Theory N3	Damelin Mowbray	28	28
Plating and Structural Steel Drawing N3	Swinton Campus	32	10
Water Treatment Practice N3	Johannesburg Institute of Engineering and Technology	41	39

It was difficult to determine why there were such discrepancies in enrolment figures. Available information was confusing in that some colleges claimed to enrol full-time candidates, part-time candidates and candidates for examination purposes only, but could not provide accurate records. Tshwane City College in Pretoria attributed the large discrepancy in the Mathematics N3 enrolments to the huge drop-out rates.

Other reasons were also given. According to the external moderator of Water Treatment Practice N3 at the Johannesburg Institute of Engineering Technology, it was difficult to verify the numbers as no register existed. It appeared that 39 students had been enrolled, but there were 41 on the mark sheet and 43 on the list in the administration office. The external moderator for Business English N3 at Khomanani Business College was unable to verify the numbers because there were no registers or enrolment figures available at the college. Forty-two files had been provided and all had been moderated. In response to queries about the location of the other files, a pile of files on the floor was pointed out. These were incomplete, with Business English heaped together with Sake-Afrikaans, and nonetheless not making up the number of those ostensibly enrolled.

Only 65% of new students were exposed to pre-enrolment support in the form of placement tests such as PACE, CAP and other career orientation tests. The external moderator of Water Treatment Practice N3 reported that a career orientation test had been administered at the Johannesburg Institute of Engineering and Technology for candidates who had failed Mathematics and Science.

2.3.2 Tuition time

Tuition time varied from between three hours per week to seven and a half hours per week. The external moderators found this troubling since very few sites allocated enough tuition time according to the DHET requirements. For example, the external moderator for Business English N3 reported that at Khomanani Business College in Johannesburg, students attended class for three and a quarter hours per week. She noted that this had never been clear. It proved impossible to verify this as the timetable was not forthcoming. Yet, both Business English and Sake-Afrikaans had been offered in one classroom (two languages at the first and second language level in the same classroom). Sometimes students attended classes after hours, and sometimes on Saturdays, but there was not one room available at the site that could accommodate more than 30 students. This subject should have been offered over a year, but this college offered it over three months only (August to October).

The external moderator of Engineering Science N3, which was offered at the Crane International Academy, reported that less than half the required time prescribed for full-time classes had been spent on teaching this subject.

In Industrial Orientation N3, offered at Sandton Technical College, students were enrolled for six months to complete a three-month course and attended class for two hours per week. They had time to write one test only and to complete one assignment. These marks were halved to provide a second test mark. This subject should orientate students in industry, yet they never visited an industry.

Tuition time also varied for full-time and part-time students, but the actual numbers could not be verified as there did not appear to be a timetable for part-time students at any of the colleges moderated. Only three of the sites visited could provide numbers of employed students in the programme. At the Sasolburg Campus of the Flavius Mareka TVET College, it was explained that there was no tracking system in place to determine the number of employed people enrolled for Engineering Drawing N3.

Only one college, Gateway City College, accommodated distance learning students, but since there were only two of them, they were given assistance ad hoc.

2.3.3 Physical and other resources

Not one of the sites monitored had exposed students to the workplace which, considering that these are practical subjects, was a major cause for concern.

The students had access to computers and printers at only 77% of the sites and only 59% had access to the internet. At Damelin (Mowbray), the external moderator of Plant Operation Theory N3 reported that there were only six computers at the site and that students were allowed a session of two hours at a time on the internet only. At Khomanani Business College in Johannesburg, the

computer room consisted of 13 very old computers crammed into a very small, narrow room, poorly ventilated, with an office squeezed into one corner.

Even though 82% of the sites had adequate facilities for teaching theory, it was reported that the facilities were not adequate at two sites visited, as reflected in the table below:

Table 2C: Inadequate facilities

Subject	Site	Comments
Business English N3	Khomanani Business College	One classroom could, at a squeeze, accommodate 30 students. The classroom was on the 4th floor of a dilapidated building in the city centre. The lecturer explained that there were seldom more than 20 students at one sitting as the students had been divided into groups. In the absence of a timetable, it was difficult to imagine how over 700 students were accommodated here. The premises were unsuitable for an educational institution and did not meet the minimum standards.
Electrical Trade Theory N3	City View Business College	The students were apparently taken to Johannesburg Institute of Technology (JIT) for exposure to practical work. As an inner-city college, there was little supporting infrastructure. The area was run down and appeared to be unsafe.

It was reported that students had not been exposed to any form of practical training conducted in a workshop to link theory with what was actually happening in the workplace; in 2014 and 2015, 50% and 25% of enrolled students respectively were exposed to workshops.

At Zwelitsha and Midlands Campuses it was reported that additional teaching material, computers, the internet and laboratories were available only to NC (V) students and not to NATED Report 190/191: Engineering Studies students.

Of grave concern was the number of colleges that did not provide textbooks for their students. Textbooks or portions of the textbook had been photocopied for students at the following colleges:

Table 2D: Lack of textbooks

Subject	College	Comments
Business English N3	Khomanani Business College	The textbook was photocopied and both the lecturer and the principal admitted that they were infringing copyright regulations.
Electrical Trade Theory N3	City View Business College	The textbook was photocopied for each student.
Engineering Science N3	Crane International Academy	The textbook was photocopied for students.
Industrial Orientation N3	Sandton Technical College	Copies of some notes and old question papers were given to students as study guidelines.

Subject	College	Comments
Mathematics N3	Tshwane City College	The students were not provided with textbooks. They either bought them themselves or had them photocopied.
Plant Operation Theory N3	Damelin (Mowbray)	The students were expected to buy the textbooks elsewhere (they were provided with a list). They could have used the textbooks in the library, but there were not enough of these as there were only two books per subject available.

Also of concern was the fact that only just over half the sites (59%) made use of additional teaching materials and only 35% exposed their students to models and demonstrations to enhance their understanding of subject content. It was reported that there were no models or any practical exposure in Engineering Drawing N3 at Sasolburg Campus. At Crane International Academy, students were not exposed to demonstrations or models. The same applied to Building Science N2 at Zwelitsha Campus, where the lecturer said that he was in need of laboratory equipment for teaching scientific concepts. The lack of additional teaching resources at Itemoheleng Campus was also worrying.

2.3.4 Human Resources

Most of the lecturers had received training and industry experience but it was not always clear whether they were qualified to do their work.

The lecturers at seven of the sites visited (41%) had not been exposed to the workplace environment or to the relevant industry in the subjects they were teaching compared to 25% in 2015. All subjects except for Mathematics were practical subjects in fields characterised by technological advances. This lack of workplace exposure could influence the ability of lecturers to prepare their students for employment.

Fifty-nine percent of the sites had a training plan for their staff compared to 25% in 2015, yet 65% of the staff indicated that they needed training, mainly in the areas indicated in the following table:

Table 2E: Lecturers' training needs

Subject	Site	Comments
Building Science N2	Zwelitsha Campus	Refresher courses in Diesel and Motor Mechanics in order to keep up with current developments.
Engineering Drawing N3	Sasolburg Campus	Upskilling and training in the latest technology.
Industrial Electronics N3	Gateway City College	Training in ICASS documentation and in subject content.
Mathematics N3	Tshwane City College	Even though the lecturer did not feel he needed any further training in order to improve delivery, he definitely needed training in the setting of assessments.

Subject	Site	Comments
Plating and Structural Steel Drawing N3	Swinton Campus	Training in the implementation of the ICASS Guidelines and exposure to the workplace was required since the lecturer had not been in the industry since his appointment as an educator.

2.3.5 Internal assessment policies and systems

It was noted that many of the assessment policies catered only for assessments of NC (V) and not for NATED Report 190/191: Engineering Studies. There were also aspects that the assessment policy did not cover, such as monitoring and moderation of assessment (82% were compliant), the appeals procedure (82% were compliant), absenteeism (71% were compliant), late or non-submission of tasks (65% were compliant), provision for learners with barriers to learning (59% were compliant), conditions for reassessment (65% were compliant) and dealing with irregularities (71% were compliant).

Eight sites could produce all the necessary documents: Zwelitsha Campus, JFA Square Technical Training College, Sandton Technical College, City Campus, Tshwane City College, Itemoheleng Campus (Mechanotechnology), Damelin (Mowbray) and Swinton Campus.

2.3.6 Monitoring

Fifty-nine percent of sites had a plan for monitoring assessments, compared to the 25% of 2015; 65% of these sites could provide evidence of this plan having been implemented compared to the 25% of 2015. Fifty-three percent of the sites had submitted reports to the Academic Board, a significant improvement on the complete lack of submission of these reports in 2015. Only 35% of sites could provide evidence of a subject monitoring report per lecturer and 35% had evidence of a pre- and post-moderation report.

There was no evidence of monitoring at four colleges, but five sites, namely Sasolburg Campus, Itemoheleng Campus (in two subjects), Damelin (Mowbray) and Bellville Campus could produce this evidence. Please note: only one of these sites is not a public TVET college, namely Damelin College.

2.3.7 Task development plan

In 76% of instances there was a plan for the development of tasks, compared to 50% in 2015; however, at only 71% of these sites was there evidence that the tasks had been developed according to the plan. Seventy-six percent of the sites described what the tasks were, 65% indicated who would set the tasks and 53% indicated who would moderate the tasks. Only 65% of sites provided the remaining details such as what content would be covered or what the duration,

mark allocation or timeframes would be. Seventy-one percent of sites had systems in place for checking that tasks were of an acceptable standard, compared to 50% in 2015. Fewer than half the sites (41%) could provide examples of additional supporting tasks.

2.3.8 Irregularities register

Seventy-one percent of sites produced irregularity registers, but only 29% of these sites had recorded irregularities in assessments efficiently. This is an improvement on the 50% of sites that had irregularity registers in 2015, however it appears that these registers are used only during national examinations.

2.3.9 Lecturers' files

a) Lecturers' subject files

Only one of the 17 sites visited, compared to none in 2015, had all the documents available in the lecturer's subject file: JFA Square Technical Training College. Only 59% of the lecturers had included their personal details in the files. Eighty-eight percent of sites produced evidence of registers, and 71% had a syllabus for the subject, compared to 56% in 2015. Lesson plans and teaching resources were available at 88% of the sites but evidence of additional supporting tasks was only available at 77%. Twenty-nine percent of the sites did not review students' tasks. Ninety-four percent of the files contained examination papers that had been used as additional exercises. Only 53% of the sites had kept the minutes of subject meetings.

b) Lecturers' assessment files (PoA)

Documents relating to the assessment of a subject must be filed in the PoA. Three sites were fully compliant and all the documents were available: Zwelitsha Campus, JFA Square Technical Training College and City Campus. All the sites were fully compliant in providing their assessment tools (two tests and the marking guidelines). There was evidence of 77% of the tasks having undergone pre-assessment moderation and 82% having been moderated post-assessment.

The external moderator of Business English N3 reported that the PoA of Khomanani Business College had been particularly disorganised in preparation for the external moderator's visit. There were two files, since one was full. The files contained a great deal of duplication and outdated documents such as 2014 lesson plans. The lecturer said that he did not have a first language syllabus, but this was in the file; this was ample evidence that he had not consulted the file or the syllabus.

Ninety-four percent of the sites had provided marksheets and 71% of the marks had been captured electronically. Seventy-one percent of the sites had captured, transcribed and converted their marks correctly, compared to 50% in 2015.

The following table illustrates the external moderators' concerns concerning the recording of marks:

Table 2F: Inaccurate recording of marks

Subject	Site	Comments
Business English N3	Khomanani Business College	The mark sheet had been handwritten and names of students were not in alphabetical or numerical order. Some names had been repeated but with different marks. The list did not correspond with enrolment numbers. There were also errors on the mark sheet when this was compared with students' scripts.
Engineering Drawing N3	Sasolburg Campus	Marking was not of a high standard and there was no consistency in the awarding of marks. Mistakes had also been made. There was evidence that a student had written a test as the script had been moderated and s/he had obtained a mark of 68% but had been given a year mark of 0. In another incident, a student who had been absent from the test was awarded a mark of 68%.
Engineering Science N3	Crane International Academy	The marks had not been correctly converted and some mark sheets were not completed.
Mathematics N3	Tshwane City College	The marks on the mark sheet were incorrect. Some had been converted, some had not or were incorrect. The accuracy of the marks had not been validated.
Plant Operation Theory N3	Damelin (Mowbray)	Damelin had no process of verifying the accuracy of marks. Some major discrepancies were found.

There were moderation reports and checklists in 71% of the PoAs. Sixty-five percent of the sites visited had followed the syllabus but only 59% provided evidence that the ICASS Guidelines had been consulted. There was evidence that the learner's performance in each task had been analysed in only 41% of PoA.

The following table highlights the areas in which the ICASS Guidelines were not followed:

Table 2G: ICASS Guidelines not used

Subject	Site	Comments
Building Science N2	Zwelitsha Campus	ICASS processes not aligned to DHET requirements.
Business English N3	Khomanani Business College	PoA did not meet the minimum standards. Site offered one-year subjects over three months (August to October) and did not comply with the minimum number of periods/hours per week.
Engineering Science N3	Crane International Academy	The registers were so badly maintained that the college could not implement the 80% attendance rule. The 40% term mark rule could not be applied either since the students had been notified too late. The college undertook to apply these rules in 2017.

Subject	Site	Comments
Mathematics N2	City Campus	The ICASS Guidelines referring to marks had not been implemented.
Mathematics N3	Tshwane City College	The prescribed contact time had not been adhered to.
Plant Operation Theory N3	Damelin (Mowbray)	DHET's College Attendance and Punctuality Policy had been included in Damelin's assessment and moderation policy, but it was not being implemented. An average of 30–40% of the students attended classes daily, but all students had been allowed to write the examinations. Damelin did not have a standardised method of calculating the percentage of attendance of each student.

2.3.10 The assessment tasks

Eighty-eight percent of the tasks and tests were simply copies of previous examination papers. This was the case at 12 of the 17 sites: City View Business College, Sasolburg Campus, Crane International Academy, Gateway City College, Sandton Technical College, City Campus, Tshwane City College, Itemoheleng Campus, Bellville Campus and Johannesburg Institute of Engineering and Technology. The internal moderation had not identified this practice at these colleges.

Eighty-two percent of the tasks covered a substantial amount of work compared to 69% in 2015 and even though few sites had designed or used an assessment or analysis grid, 88% of the weighting and spread was appropriate, compared to 63% in 2015. Sixty-five percent of the marks had been converted to reflect the weighting for the subject.

Eighty-eight percent of the tasks met the cognitive demands of the subject compared to 69% in 2015. Only 65% of the tasks varied in terms of difficulty but 82% assessed a variety of knowledge and skills, with 77% being a combination of short, medium and extended questions. Sixty-five percent of the tasks reflected the latest developments in the subject compared to 38% in 2015 but only 41% encouraged creative responses.

2.3.11 Internal moderation of tasks

The general impression of the external moderators was that internal moderation was a neglected area at most of the sites visited. Even though there was an internal moderator's checklist at 82% of the sites compared to 69% in 2015, only in 59% of cases was the standard of the checklist appropriate. If there had been any recommendations, only 35% of lecturers had responded to them. Fifty-nine percent of the tasks had been moderated and in 65% of cases, the sample internally moderated contained the full range of marks. At 41% of the sites, the assessor was provided with qualitative feedback.

There was very little compliance with the requirements of internal moderation at four sites, namely Khomanani Business College, Gateway City College, Sandton Technical College and Itemoheleng Campus (Mechanotechnology). There was no compliance whatsoever at three campuses, namely Itemoheleng Campus (Fitting and Machining Theory), Swinton Road Campus and Johannesburg Institute of Engineering and Technology.

The following table reflects the external moderators' findings on the internal moderation at sites:

Table 2H: Non-compliant internal moderation process

Subject	Site	Comments
Building Science N2	Zwelitsha Campus	When the moderator is unavailable, the college should ensure that some measures are in place to address this issue. Only the first test was moderated but not the second as the moderator had left the college. They had also not identified serious errors in the marking guidelines, which did not correspond to the question paper. It was therefore an instance of shadow marking and an exercise that added no value.
Business English N3	Khomanani Business College	The principal and an individual from a different private college had moderated and noticed that the marking guidelines were totally inadequate for marking a language.
Engineering Drawing N3	Sasolburg Campus	The moderator's checklist had been ticked, even the points that were not applicable. Even though the marking guidelines had weaknesses, where ticks did not indicate where marks should be allocated, the comment was "test up to standard, thank you" when it clearly was not. In the post-moderation process, the moderator had awarded an extra mark, ignoring the marking guidelines.
Engineering Science N3	Crane International Academy	There was a pre-moderation checklist but the boxes had simply been ticked with no comments or recommendations added.
Industrial Electronics N3	Gateway City College	More vigilant internal moderation would have identified the many weaknesses in the tasks and in the marking.
Plating and Structural Steel Drawing N3	Swinton Campus	The lecturer was the only boiler maker on the campus and thus nobody was able to moderate his assessments.

2.3.12 Technical aspects

Eighty-two percent of the tasks had been neatly typed, compared to 63% in 2015, and contained all the relevant information with clear instructions. Ninety-four percent of the tasks contained appropriate language and terminology compared to 88% in 2015. In 94% of instances, the mark allocation was clear and the marks in the question paper corresponded with the marks in the marking guide. Illustrations were of a good quality in 76% of the instances where they occurred,

compared to 63% in 2015. All the sites had numbered the tasks correctly and the time allocation in 82% of the tasks was realistic. The technical aspects of the tasks had improved overall since 2015.

2.3.13 Marking tools

Eighty-eight percent of the marking tools were appropriate and relevant compared to 69% in 2015. Sixty-five percent allowed alternative responses compared to 56% in 2015. Seventy-one percent were clear and neatly typed with clear mark allocations distributed within the questions and were easy to use. Although the marking tools had improved since 2015, this instrument is the key to the effective assessment of students and must be flawless.

The external moderators made the following observations about the marking tools:

Table 2I: Inaccurate marking guidelines

Subject	Site	Comments
Business English N3	Khomanani Business College	There was no indication of how the question should be marked, and no language or format grids. No totals were available. This would have required guesswork when marking. One of the marking guidelines was incomplete with two questions not allocated marks and one question requiring 10 answers in the marking guidelines while the question paper only had seven questions. The quality of marking was thus questionable as was the internal moderation.
Engineering Drawing N3	Sasolburg Campus	There were no ticks to indicate where marks had been allocated.
Fitting and Machining Theory N2	Itemoheleng Campus	Marking guidelines were provided for the first test only. The marking guidelines for the second test had been stolen. The lecturer realised that the students had seen the answers when he marked the test. Instead of reporting this as an irregularity, he was loath to disadvantage students and awarded them the marks.
Industrial Orientation N3	Sandton Technical College	The marking guidelines were available only for the first test and lacked a proper mark allocation or distribution.

2.3.14 Student performance

At 94% of the sites, the students coped well with the questions and their responses to the tasks were competent. At 82% of the sites, marking was consistent, and the allocated marks were a true reflection of students' ability. Eighty-eight percent of the sites reflected an acceptable standard of marking compared to 50% in 2015 and marks had been accurately totalled and transferred. Only 29% of the assessors had given students feedback, a drop since 2015 when the figure was 44%. This feedback was judged as irrelevant, inadequate or unfocussed. Internal moderation had taken place at 77% of the sites but the standard was acceptable at only 58% of them.

2.3.15 Evidence of the three additional subjects

The information gathered by the moderators for the three subjects, namely Mathematics N3, Engineering Science N3 and Industrial Electronics N3 is presented below.

- Evidence was received from external moderators for 10 colleges/campuses. No evidence was gathered for the three additional subjects at five sites namely Gateway City College, JFA Square Technical Training College, JHB Institute of Engineering and Technology, Swinton Campus and Zwelitsha Campus.

The following table reflects adherence to the criteria in the three additional subjects:

Table 2J: Monitoring of NATED internal assessment – November 2016

Criteria	Bellville Campus	City Campus	City View Business College	Crane International Academy	Damelin Mowbray	Itemoheleng Campus	Khomanani Business College	Midlands Campus	Sandton Technical College	Sasolburg Campus	Tshwane City College
MATHEMATICS N3											
DHET enrolments	62	124	174	173	89	131	437	141	190	371	118
Candidates' names on mark sheet	54	29	N*	N*	86	88	N*	32	84	108	88
Record of class attendance	Y	Y	N*	N*	Y	Y	N*	Y	I*	Y	Y
80% rule implemented	Y	N	N*	N*	N	N	N*	N	N	Y	N
Evidence: Test 1	Y	Y	N*	N*	Y	Y	N*	Y	Y	Y	Y
Evidence: Test 2	Y	Y	N*	N*	Y	Y	N*	Y	Y	Y	Y
Mark conversion correct	Y	Y	N*	N*	Y	Y	N*	Y	Y	Y	N
ENGINEERING SCIENCE N3											
DHET enrolments	67	132	117	146	64	130	300	159	184	504	103
Candidates' names on mark sheet	58	29	N*	90	59	74	N*	28	90	134	26
Record of class attendance	Y	Y	N*	Y	Y	Y	N*	Y	I*	Y	Y
80% rule implemented	Y	N	N*	N	N	N	N*	N	N	Y	N
Evidence: Test 1	Y	N	N*	Y	Y	Y	N*	Y	Y	Y	Y
Evidence: Test 2	Y	Y	N*	Y	Y	Y	N*	Y	Y	Y	Y
Mark conversion correct	Y	Y	N*	Y	Y	Y	N*	Y	Y	Y	N

Criteria	Bellville Campus	City Campus	City View Business College	Crane International Academy	Damelin Mowbray	Itemoheleng Campus	Khomanani Business College	Midlands Campus	Sandton Technical College	Sasolburg Campus	Tshwane City College
INDUSTRIAL ELECTRONICS N3											
DHET enrolments	21	86	25	98	12	64	46	O*	80	165	43
Candidates' names on mark sheet	21	27	N*	N*	11	39	N*	O*	38	90	15
Record of class attendance	Y	Y	N*	N*	Y	Y	N*	O*	I*	Y	Y
80% rule implemented	Y	N	N*	N*	N	N	N*	O*	N	Y	N
Evidence: Test 1	Y	Y	N*	N*	Y	Y	N*	O*	Y	Y	Y
Evidence: Test 2	Y	Y	N*	N*	Y	Y	N*	O*	Y	Y	Y
Mark conversion correct	Y	Y	N*	N*	Y	Y	N*	O*	Y	Y	N

Key:

Y = Yes

N = No

N* = No evidence was available on request

I* = Incomplete

O* = Subject not offered

The following is evident from the table above:

- The 80% class attendance rule was implemented at Belville Campus and Sasolburg Campus;
- Nine sites could provide evidence of tests of one, two or all three of the additional subjects. These sites are Bellville Campus, City Campus, Crane International Academy, Damelin Mowbray, Itemoheleng Campus, Midlands Campus, Sandton Technical College, Sasolburg Campus and Tshwane City College; and
- Two sites could not provide any evidence of the tests used to compile the ICASS marks namely Khomanani Business College and City View Business College. This casts serious doubts on the reliability of the ICASS marks submitted to the DHET and it may be that the ICASS marks were fabricated;

2.4 Areas of Good Practice

The following areas of good practice were identified:

- More (59% versus 25%) sites had a training plan for their staff than in 2015;
- There were more sites with plans for the development of tasks than last year (76% compared to 50%);
- Fifteen percent more sites had the correct syllabus available;
- There was a 21% improvement in the correct capturing, transcription and conversion of marks compared to 2015;
- Thirteen percent more tasks covered a substantial amount of work and in 25% of tasks the weighting and spread were more appropriate: 19% more tasks met the cognitive demand than in 2015; and
- The standard of marking of tasks had improved by 38% since 2015.

2.5 Areas of Concern

The following challenges and concerns were observed:

- The discrepancy between the DHET's enrolment figures and those at colleges was a matter of concern;
- There was a lack of proper implementation of the ICASS Guidelines at all sites of teaching and learning;
- The qualifications and/or workplace experience of some lecturers were not relevant or were inadequate for effective teaching;
- Quantitative and qualitative physical and human resources at some colleges/campuses were lacking or non-existent which had a detrimental effect on the teaching and learning process;
- Lecturers were not making enough use of additional supporting materials, which would have made the subject more interesting and comprehensible to students;
- There was a lack of proper record-keeping and safekeeping of students' evidence;
- Monitoring and internal moderation of files was inferior at some colleges and management staff was unaware of what was happening in classrooms; and
- The irregularity register appeared to be used for national examinations only and irregularities in internal assessments were not recorded.

2.6 Directives for Compliance and Improvement

In order for teaching and learning to take place effectively at the colleges in this sector, the following directives were made to ensure compliance and improvement:

- Physical and human resources at a college/campus should enhance a learning environment so that effective learning on site is viable. Students should be exposed to more

practical classes where additional learning material is used to enhance their experience and understanding of the subject. Colleges could enrich learning by holding workshops and using models to expose students to the reality of the workplace;

- All lecturers should familiarise themselves with the contents of the ICASS Guidelines and implement assessment according to the requirements stipulated in the guidelines;
- DHET instructions on minimum requirements for examination admission must be enforced (80% attendance and minimum ICASS mark for permission to sit for the examination); and
- Evidence of students' assessments should be kept safely and be made available for scrutiny at any time.

2.7 Conclusion

Although the standard of assessment tasks has improved, tasks at some colleges are still being based on previous examination papers, using cut and paste methods. If educators are not exposed to the workplace more regularly or allowed to improve their qualifications and experience through training, they will be unable to share this knowledge with their students. An overall improvement in the quality of tasks and teaching and learning offered at sites was observed. However, crucial aspects still require attention if the standard of the NATED programmes is to be improved, making this a valued qualification.

CHAPTER 3: STATE OF READINESS

3.1 Introduction

Umalusi is the quality council responsible for the General and Further Education and Training Qualifications' sub-framework. Umalusi has the responsibility to ensure that the conduct, administration and management of examinations are credible. As part of its mandate, Umalusi verifies the extent to which assessment bodies are ready to conduct the national examinations.

The purpose of this report is to provide an update on the state of readiness of the Department of Higher Education and Training (DHET) to administer and manage the 2016 November NATED Report 190/191: Engineering Studies and National Certificate (Vocational) (NC (V)) examinations.

Please note that in this chapter, reference is made to information that pertains to both NATED Report 190/191: Engineering Studies and National Certificate (Vocational).

3.2 Scope and Approach

External monitoring by Umalusi was intended to verify the appropriateness of examination processes and procedures established by the DHET to conduct the 2016 November examinations.

Umalusi officials conducted a verification process of the state of readiness of the DHET. Data was collected through observations and interviews, and by verification and observation of presentations by DHET officials of their systems, using pre-determined audit tools. The findings, areas of good practice, areas of concern and recommendations for compliance are presented below.

3.3 Summary of Findings

Umalusi officials visited the DHET in order to verify its state of readiness. The visitors made the following findings:

3.3.1 Registration of Candidates

The registration of candidates for the NC (V) had been completed. Registration of the NATED Report 190/191: Engineering Studies candidates was continuing and would be completed by 24 October 2016.

The majority of the centres (mainly public) were using electronic registration although some had submitted hard copies completed by the candidates.

Although the examination system has been designed to validate whether the identity document (ID) number has 13 characters, in this case it could not validate whether a number was valid as the system had not been linked to Home Affairs.

Many colleges merely reregister candidates from one examination session to the next, without verifying whether the candidate is in fact attending classes at that college. Such a candidate may then register at a different institution, with the result that registration for this candidate may be duplicated. This is further compounded by the fact that the assessment body does not de-register a candidate at either centre level or when a subject is changed. The assessment body indicated that in such cases, every effort was made to link candidate records in order to avoid duplication. The question arose as to which college the candidate was registered at and whether the candidate was attending classes there.

The use of a manually generated mark sheet is regarded as an irregularity and disallowed. The DHET has introduced a process of oversight to ensure that all issues of wrongly registered subjects and unregistered candidates are handled before writing commences.

3.3.2 Conduct of Internal Assessment (ICASS)

The National Guidelines for NC (V) and NATED ICASS are used to inform the monitoring and moderation of the ICASS process.

The appointment (reintroduction) of regional officials was seen as a positive move this year. As a result of visits by these officials to selected colleges, the submission of ICASS files had improved in general. These officials had been trained to monitor the ICASS early in 2016 at the DHET offices in Pretoria.

Monitoring is conducted during each examination cycle. Some regions prefer to do this at a centralised venue while others visit individual colleges. The Institutional Assessments unit at the DHET selects subjects and communicates this information to regional officials. These officials then select various subjects to monitor, including as many as possible in the monitoring and moderation process. Colleges that did not adhere to ICASS Guidelines and those where ICASS tasks were of an inferior quality are revisited. A consolidated report on each examination cycle is compiled once the monitoring has been concluded.

Moderation is conducted by subject matter experts who are selected from current DHET setting and marking panels. This year, the moderation was planned from 22–23 October 2016 and a consolidated moderation report would then be compiled.

Marks for Department of Correctional Services (DCS) and private centres are captured in-house at Chief Directorate: National Examinations and Assessment (CD: NEA), while public centres capture and submit electronic text files that are then uploaded onto the mainframe by CD:NEA.

One of the challenges remains the failure of certain colleges to submit evidence of their internal assessments, suggesting that these colleges had candidates who were writing the examination

only. The DHET official requested enrolments from the registration unit. If candidates were enrolled for the examination only, the official would ask where the college got the ICASS mark, often without success.

Financial constraints (limited budgets) make the monitoring and moderation of internal assessments difficult.

Conversions of marks must be done according to the ICASS Guidelines. The procedures for the correct capturing and conversion of marks are also prescribed in the Guidelines for the Conduct and Administration of Examinations in TVET Programmes.

3.3.3 Printing, Packaging and Distribution

a) Printing and Packaging

The CD: NEA has for the last year outsourced printing and packaging to the Government Printing Works (GPW). The security arrangements are stringent at the printing works and only authorised personnel are allowed access. This year the DHET indicated that they had monitored the situation daily by sending DHET officials to the packing area as they were not allowed in the printing area. No registers were available to verify that this had been done, however. In addition, no checklist was available to indicate how officials monitored this printing site. As a rule, the DHET sends the approved papers on a CD to GPW; the papers are not proofread once they have been printed. This aroused concerns as some items may not print correctly in the required format and should be checked before packing. Unique job numbers for each question paper were used to track these papers during the printing process, however.

Once scripts have been printed they are electronically packaged in batches and labelled according to the sites of delivery. The machines pack up to 220 scripts at a time. In cases of high volume and short lead time, packages may be placed manually in bags for distribution. Those scripts packed manually did not have bar codes attached: the DHET has made it a priority to rectify this in 2017.

The CD: NEA has no influence on who is employed by the GPW, where contract staff assists with operational tasks. The only precaution taken is that staff members sign a declaration of secrecy. This raised concerns as examination papers are high risk and it was suggested that a more stringent process of screening of staff dealing with examination papers should be followed.

To date, there have been no problems related to packaging of scripts. The process is still fairly new as GPW was awarded the contract only from the beginning of 2016.

When asked whether the CD:NEA was concerned about the capacity and security of the GPW, officials made it clear that they were confident as the GPW was employed in many high security

risk operations, such as the printing of identity documents for the Department of Home Affairs, and had delivered successfully.

b) Storage and Distribution

The department provides the printing works with a list of nodal points of delivery, together with the addresses and names of contact persons who sign for the receipt of scripts. The printers distribute the packs by labelling them accordingly. Packs of the various subjects to be written at and collected by an examination centre are placed in one bag that is sent to the address indicated by the DHET. The courier, Skynet, collects these bags from the GPW and delivers them to centres in all provinces. Papers are delivered three to four days prior to the date of the examination. Individuals from the various examination centres collect the papers two hours before the examination is to be written and return the answer scripts one hour after the examination has been written. In cases where the travelling distance is too great to allow this, a concession may be made once prior permission has been obtained.

To date, the DHET has experienced no problems regarding this distribution, but once again the contract with the GPW is fairly new. The actual distribution process has not been verified by viewing it at the GPW and will thus require monitoring during the examination period.

In conclusion, the packaging and distribution has been outsourced to the GPW and the terms of reference have been clearly spelt out in the contract. Although the DHET alluded to visits to the printing works, a clear monitoring plan with a checklist of what should be monitored must be completed when monitoring visits take place during printing, packaging and distribution visits. This checklist should then be filed for easy access in order to provide evidence that these processes have been monitored.

3.3.4 Conduct of Examinations

The DHET has developed detailed Guidelines for Conduct and Administration of Examinations in the TVET programme, which was revised in 2016. Roadshows were planned for all the provinces. Evidence of these roadshows having taken place was provided for verification.

a) Appointment of Chief Invigilators and Invigilators

All campus managers (college principals - in the case of private colleges) are deemed to be the chief invigilators for their particular centre. These officials may delegate this duty to a senior official. Chief invigilators are formally appointed by principals and they then appoint invigilators. Training sessions for chief invigilators took place during September and October 2016 and the attendance register was provided as evidence. Signed letters of appointment for chief invigilators were also provided.

b) Monitoring of Examination

Monitoring of the 2016 examinations will be conducted at various levels. The DHET will sample a number of colleges to monitor. The sampling and the targeted number of centres had not yet been finalised at the time of Umalusi's visit.

It was decided that the newly established regional offices would be used for the first time to monitor examination centres. All regional offices would use the monitoring schedule and newly prescribed instrument provided by the DHET. Training of all monitors had been conducted and the training manual as well as the attendance register was provided for verification.

c) Management of Irregularities

The department has a fully functional National Examination Irregularities Committee that is chaired by the director. All irregularities identified during the writing of examinations are to be reported to the College Irregularity Committees (CIC), which is responsible for managing irregularities. These irregularities should be recorded daily after each examination session. The DHET blocks all reported irregularities if they have not been resolved.

A register of all irregularities is kept by the DHET, which submits all irregularity reports from each examination cycle to Umalusi.

It was established that monitoring of all high risk centres might not be possible during this examination cycle owing to a shortage of staff.

3.3.5 Appointment and Training of Marking Personnel

a) Appointment of Markers

Memorandum 04 of 2016 was sent to all the sites of delivery, stipulating the procedures to be followed during the marking application process.

The marker selection panel consisted of DHET officials, marking centre managers and deputy managers of national and provincial marking centres. SADTU maintained its observer status at meetings held on 12–13 March 2016 and 14–15 May 2016. In addition, a representative from the Free State regional office attended the meeting which was held on 12–13 March 2016.

The purpose of the meetings was not only to evaluate the applications and make recommendations for the appointment of markers, chief markers and internal moderators, but also to reinforce the marking centre management teams' responsibilities and address areas of concern. New developments in terms of assessment and related matters were also shared in order to inspire and support high quality vocational training and education in South Africa.

Management staff at each marking centre was provided with an opportunity to select and recommend its own staff as marking personnel in accordance with the criteria stipulated in the Personnel Administrative Measures (PAM), chapter E and paragraph 4.1 to 4.3 of the Employment of Educators Act, Act 76 of 1998. The following criteria from these documents were applicable to the selection of markers:

- An individual should have at least a three-year post-matriculation qualification, which must include the subject concerned at second or third-year level or other appropriate post matriculation qualifications;
- An individual should have extensive experience as an educator in the particular subject or a related subject and at least two years' experience teaching the subject at the level, currently and/or within the last two years;
- Preference should be given to serving college-based educators in persal or council posts;
- Language competency.

Applicants indicated the position applied for as marker, chief marker or internal moderator on the application forms. Applicants' experience in marking and lecturing were considered when appointing chief markers and internal moderators.

Where no candidate with the minimum qualifications or experience could be recruited, approval for the appointment of a candidate with another appropriate post-school qualification or less than the required experience could be granted in particular cases. New appointments should be included to build capacity among serving educators.

The application form used in the past was reviewed and the following additional information was included:

- Deputy principal: academic must approve applications, and
- Information on the performance/results of the applicant's students in the 2014 and 2015 examinations is required.

An evaluation checklist including the following information was to be checked (by the evaluators) and completed for each applicant:

- Number of years teaching (lecturing) the subject at the particular level;
- Year in which the subject was last taught at this level;
- Application signed by applicant;
- Application endorsed and signed by immediate supervisor/HOD;
- Application endorsed and signed by campus manager;
- Application endorsed and signed by the deputy principal: academic;
- A certified copy of the ID attached;
- Does the applicant have a relevant qualification in the subject he/she is applying to mark?
- Recommendation by DHET selection panel and the position (marker, chief marker, internal moderator, reserve list or not eligible – with a reason if not eligible); and
- Surname, initials and signature of the evaluator.

A system comprising detailed processes had been established to assist in the recruitment and appointment of marking personnel.

The following shortcomings were observed, however:

- Duplicate applications, e.g. applicants who applied for more than one subject and different levels were not identified before the marker selection process. A candidate could therefore go through the initial screening process and be recommended for appointment to a number of subjects. This complicated the appointment process and was furthermore a factor that contributed to the shortage of markers;
- The exclusion of experienced markers owing to the requirement that an applicant had to have taught the subject at the particular level during the past two years;
- Low number of marker applications received and the subsequent large number of marking staff appointed at the marking centres, who in some cases did not meet the criteria;
- Lack of markers for certain subjects;
- Incomplete application forms, or applications that did not meet the minimum requirements, signed off by campus management;
- Recommendation of marking staff whose students performed below the 50% pass rate or who did not indicate their performance;
- Inconsistent recommendations by evaluators, e.g. a less well qualified applicant with less teaching experience appointed as a marker or internal moderator while an applicant with better qualifications was recommended as a reserve marker.

All appointed markers were requested to submit a response form (acceptance of appointment form). In addition, they received the Conditions of Appointment, Duties of Marking Officials and House Rules. Each marker was required to sign a personal declaration and submit a "release for marking duties" form signed by his/her manager.

In an attempt to solve the recurring shortage of marking personnel in certain subjects, the DHET decided to mark these subjects at more or specific marking centres. Engineering Science N3, Mathematics N3, Industrial Electronics N3 and Electro-technology N3 were, for example, identified as subjects for which it had proved difficult to recruit markers in the past. The intention was to mark these four N3 subjects at provincial marking centres as well as at the national marking centre. The same decision applied to some of the NC (V) subjects, e.g. the fundamental subjects. Insufficient applications were received at some of the marking centres and these plans had to be adjusted.

Where shortfalls in the number of marking personnel for particular NATED subjects occurred, recruitment was done by the marking centre. Substantial numbers of additional marking staff had to be recruited. For example, at Centurion marking centre an additional 63 markers/chief markers/internal moderators were appointed for N2 and N3 subjects. The prescribed process was followed in the appointment of these personnel, namely: completion of the application form, personal

declaration and a form releasing the staff member for marking. Evaluation of the appointments of these marking personnel revealed the following:

- All or almost all of the marking personnel responsible for the marking of certain subjects were recruited from one college only;
- Appointment of markers/chief markers/internal moderators who did not meet some of the criteria;
- Appointment of one individual as marker/internal moderator of several subjects.

Marking personnel were appointed for all three examination cycles in the case of NATED Report 190/191: Engineering Studies (thus the April, August and November examinations) and for both the November and Supplementary examinations for NC (V). Many markers applied to mark both NATED and the NC (V). This led to a shortage of 350 NC (V) markers. The DHET therefore embarked on a further advocacy and recruitment process. The closing date for these applications was 14 October and Umalusi would have to monitor the final appointments after 21 October 2016.

The following criteria were applicable for the appointment of examination assistants:

- Applicant must be a college graduate, i.e. have completed NC (V) Level 4, NSC or N6;
- Applicant must not be a registered student at a TVET college;
- Applicant must not be a candidate who sat for the examination being marked;
- Must be a South African citizen;
- One examination assistant per 1 000 scripts should be appointed; and
- Only college administrative personnel and/or students should be appointed.

b) Training of Marking Personnel

Chief markers and internal moderators are trained before the pre-marking sessions. All markers undergo the same training before the standardisation of the marking guidelines and the sample marking sessions. Further training is conducted during the marking guidelines discussions and marking process.

3.3.6 Capturing of Marks and Certification

a) Capturing of Marks

Marks for the Integrated Summative Assessment Task (ISAT) and ICASS (for both NC (V) and NATED), the end-of-year examination for NC (V) L2 and L3 are captured by the TVET colleges (public colleges) and sent to the DHET as text files where they are uploaded onto the mainframe. The DHET makes spot checks/selective verifications to verify the correctness of the marks. Marks from private centres are captured from the mark sheets at the DHET by appointed data capturers.

Capturing of examination marks occurs at the marking centres. Data capturers are contracted and trained for this purpose. At the time of this visit, no data capturers had been appointed. Once appointed, data capturers sign a declaration of secrecy before they assume duties. All capturing that takes place at the marking centre is verified: double capturing is applied in the capturing of marks. Capturing is done by two users or user ID(s).

The DHET uses a scanning program, MPFLOW, to manage and control mark sheets. Mark sheets are scanned during despatch and on return. Capturing of marks runs parallel to the marking process to ensure that all marks are captured in time for the standardisation process. The DHET uses an offline capturing tool for this purpose.

b) Certification

The certification of learner achievement remains problematic.

The on-going changing of marks, after the resulting process has been completed, raises serious concerns as to the authenticity of the data submitted at certification. These mark changes are effected for many and varied reasons; however, only one official determines a mark change and this is captured on the examination system by a single official.

The assessment body does not control the distribution of certificates to learners. The onus rests on the TVET colleges to ensure that learners have received their certificates. There are no control measures to ensure that candidates receive the correct certificate, nor are any controls in place to ensure that candidates are aware that their certificates are ready for collection.

3.4 Areas of Good Practice

3.4.1 Registration of Candidates

The registration of candidates for the NC (V) has been completed.

3.4.2 Conduct of Internal Assessment

- Monitoring of internal assessments by regional officials;
- Subject matter expert moderation of conduct of internal assessment;
- Improvement in submission of files;
- Monitoring during each exam cycle.

3.4.3 Conduct of examinations

- The guideline for the conduct and administration of examinations in TVET programmes has been revised;
- Roadshows were planned in all provinces and undertaken by the DHET to make stakeholders aware of the revised Guidelines for the Conduct and Administration of Examinations in TVET Programmes.

3.4.4 Appointment and Training of Marking Personnel

- There is a system with detailed processes in place for recruitment and appointment of marking personnel;
- Application form has been reviewed;
- Applications with information on the performance/results are approved by the deputy principal: academic;
- Evaluation checklist is completed for each applicant;
- Detailed information is provided to and requested from markers. This cycle, all appointed markers were required to submit a response form (acceptance of appointment form), they received the Conditions of Appointment, Duties of Marking Officials and House Rules and they were required to sign a personal declaration and submit a "release for marking duties" form signed by their managers;
- The marking of subjects that had posed challenges with the recruitment of markers in the past was decentralised.

3.4.5 Capturing of Marks

- The use of a manually generated mark sheet is regarded as an irregularity and disallowed. The DHET has introduced a process of oversight to ensure that all issues of wrongly registered subjects and unregistered candidates are handled before writing commences;
- The internal assessment and examination mark sheets are managed and controlled by scanners during the dispatch, marking process and on return to ensure that outstanding mark sheets are tracked down. This is done to ensure a 100% capture rate for the standardisation process.

3.5 Areas of Concern

3.5.1 Registration of candidates

- The management process of duplicate registrations is not managed effectively.

3.5.2 Conduct of Internal Assessment

- Failure of some colleges to submit evidence of internal assessments;
- Limited budgets pose a challenge to the monitoring and moderation of internal assessments.

3.5.3 Printing, Packaging and Distribution

- Final, printed papers are not proofread by DHET. There is thus the risk that some items may not be printed in the required format;
- Shortage of staff to monitor packaging and distribution.

3.5.4 Conduct of Examinations

- Inadequate monitoring owing to a shortage of staff;
- Monitoring plans were incomplete during Umalusi's visit;
- DHET could not provide the number of centres that it was to monitor.

3.5.5 Appointment and Training of Marking Personnel

- Appointment of markers was not concluded during Umalusi's visit;
- Duplicate applications and incomplete application forms;
- Very few or no applicants to mark certain subjects. There was a lack of capacity in some subjects;
- Limited number of marker applications received and subsequently large numbers of marking staff were appointed at the marking centres, some of whom did not meet all the criteria;
- Inconsistent application of criteria/recommendations by different marking centres;
- Markers had been evaluated but despite some measures to prevent re-appointment of underperforming markers, there were still some challenges.
- Exclusion of experienced markers who were not teaching the subject.

3.5.6 Capturing of Marks

- A detailed management plan for capturing of marks/results was not in place;
- Effective double capturing of marks was not evident.

3.6 Directives for Compliance and Improvement

3.6.1 Conduct of Internal Assessment

Punitive measures should be introduced where colleges do not submit the internal assessments as requested by the DHET.

3.6.2 Appointment and Training of Marking Personnel

- There are specific challenges in the TVET sector: the criteria for the appointment of marking personnel should be revised:
- Viable solutions must be found in the case of subjects that repeatedly pose challenges in terms of the recruitment and appointment of suitably qualified and experienced markers/ chief markers/internal moderators.

3.6.3 Capturing of results

- A detailed management plan for the capture of marks/results should be developed from the DHET's broader examination management plan in order to ensure that all activities leading up to capturing are planned and addressed on time. For instance, plans need to be made regarding the appointment of data capturers and their training in the use of the offline capturing tool.
- Measures must be put in place to ensure that the examination system is designed to prohibit a user from both capturing and verifying the capturing of marks.

3.7 Conclusion

The audit of state of readiness of the DHET examination system confirmed that the DHET did comply with the majority of the state of readiness requirements for administering the 2016 NATED and NC (V) examinations. The DHET is advised to consider the concerns noted in this report and to report to Umalusi on its full commitment to administer the future NATED and NC (V) examinations according to the requirements.

CHAPTER 4: MONITORING OF WRITING

4.1 Introduction and Purpose

In terms of its founding Act, the General and Further Education and Training Quality Assurance (GENFETQA) Act (No 58 of 2001, as amended in 2008), Umalusi is mandated to ensure the integrity and credibility of the quality assurance of the qualifications it certifies, and to that effect, to determine whether the national policy pertaining to the conduct, administration and management of the examinations for the Technical and Vocational Education and Training (TVET) qualifications has been followed.

On the other hand, the Department of Higher Education and Training (DHET) carries the responsibility of ensuring that the examinations it administers are conducted and managed in a credible manner. During the course of 2016, the DHET invited all colleges to road shows where it provided comprehensive training on the administration and conduct of examinations.

During the months of October and November 2016, the DHET administered and managed the National Certificate (Vocational) (NC (V)) and NATED Report 190/191: Engineering Studies N2 and N3 examinations across all registered TVET colleges. In verifying the credibility of the writing of these examinations, Umalusi undertook rigorous and extensive monitoring of their conduct.

This chapter provides a summary of the findings of the monitoring of a sample of centres, and further acknowledges good practices where these were observed, and areas of concern. It also outlines directives for compliance and improvement, which should be followed by the assessment body in future.

4.2 Scope and Approach

As the Quality Council in the General and Further Education and Training Qualifications Sub-framework (GFETQSF), Umalusi judges the quality and standard of examinations by determining the degree to which the policy has been adhered to in the implementation of all examination processes, including the efficiency and effectiveness of systems, processes, and procedures for the monitoring of the conduct of the writing of examinations.

Umalusi visited a sample of 42 TVET examination centres (43 visits) to monitor the writing phase of the examinations (November/December 2016 NC (V) and NATED Report 190/191: Engineering Studies). One centre was visited twice.

The 42 centres are listed in Table 4A below. These include 19 private centres and 23 public centres. A specially designed monitoring instrument was used by the individual monitors to monitor the conduct, administration and management of the writing phase of the examinations at these centres.

Table 4A: Examination centres monitored during the writing of examinations

No.	Province	Site/Campus	Date	Subject	Candidates registered/ actual
1	Eastern Cape	John Knox Bokwe	14/11/2016	New Venture Creation L3	108/94
2	Eastern Cape	Ezibeleni	2/11/ 2016	Mathematics N2	157/135
3	Eastern Cape	King	2/12/2016	Mathematics N2	122/115
				Engineering Science N3	157/17
				Fitting and Machining Theory N2	03/01
4	Free State	Tosa	2/12/2016	Mathematics N2	306/186
5	Free State	Sasolburg	17/11/2016	Engineering Science N3	214/152
6	Free State	Thaba 'Nchu	17/11/2016	Engineering Science N3	62/50
7	Gauteng	Benoni	21/11/2016	Engineering Science N2	59/15
				Mathematical Literacy L3 Paper 2	103/88
8	Gauteng	Central Technical College – Pretoria*	18/11/2016	Industrial Orientation N3	58/39
				Industrial Electronics N2	36/17
				Industrial Orientation N2	30/06
9	Gauteng	Randfontein	7/11/2016	Mathematical Literacy L4 Paper 1	82/76
10	Gauteng	Taalnet Training Institute*	2/11/2016	Mathematics N2	97/75
11	Gauteng	Ressuct Centre for Skills*	21/11/2016	Mathematics N3	15/08
12	Gauteng	Sandton Technical College*	17/11/2016	Engineering Science N3	76/7
13	Gauteng	Churchill Resource College*	2/12/2016	Mathematics N2	97/42
14	Gauteng	Molapo	21/11/2016	Mathematics N3	48/37
15	Gauteng	Watersrand Computer and Business College*	17/11/2016	Engineering Science N3	48/19
				Fitting and Machining Theory N2	02/01
				Building Science N3	01/01
16	Gauteng	Denver Technical College*	2/12/2016	Mathematics N2	536/434
17	Gauteng	Khomanani Business College*	21/11/2016	Mathematics N3	318/51
				Engineering Science N2	97/17
18	Gauteng	Temba	2/12/2016	Mathematics N2	232/220

No.	Province	Site/Campus	Date	Subject	Candidates registered/ actual
19	Gauteng	City View Business College*	7/11/2016	Public Administration N5	01
20	Gauteng	JFA Square Technical Training Institution*	2/12/2016	Mathematics N2	139/94
21	Gauteng	Ikage SD College*	2/12/2016	Mathematics N2	55/46
22	Gauteng	Anitec College*	2/12/2016	Mathematics N2	101/96
23	Gauteng	Roseville FET College*	18/11/2016	Indusial Electronics N3	50/13
				Industrial Electronics N2	19/09
24	Gauteng	Tshwane City College*	22/11/2016	Business English N3	31/22
25	Gauteng	Jengrac College – Sebokeng*	23/11/2016	Industrial Organisation and Planning N3	44/05
26	KwaZulu-Natal	Port Shepstone	7/11/2016	Mathematics L4 Paper 1	11/11
				Mathematical Literacy L4 Paper 1	86/78
27	KwaZulu-Natal	Innovatus – Durban*	21/11/2016	Mathematical Literacy L3 Paper 2	06/06
28	KwaZulu-Natal	Majuba Technology Centre	2/12/2016	Mathematics N2	503/429
29	KwaZulu-Natal	Newcastle Technology Centre	2/12/2016	Mathematics N2	379/306
30	KwaZulu-Natal	Sundumbili	2/12/2016	Mathematics N2	138/106
31	KwaZulu-Natal	Ogwini Comprehensive Technical School*	2/12/2016	Mathematics N2	15/15
32	KwaZulu-Natal	Berea Technical College – Durban*	21/11/2016	Engineering Science N2	314
				Mathematics N3	22
33	KwaZulu-Natal	Central Technical College – Durban*	24/11/2016	Engineering Science N1	37
34	KwaZulu-Natal	Central Technical College – Durban*	2/12/2016	Mathematics N2	
35	Limpopo	Giyani	2 /12/2016	Mathematics N2	104/61
36	Limpopo	Ellisras	2/12/2016	Mathematics N2	87/81
37	Mpumalanga	Witbank	2/12/2016	Mathematics N2	358/318
38	North West	Rustenburg	1/11/2016	Mathematics N2	261/239
39	Northern Cape	Namaqualand	2/12/2016	English FAL L4 Paper 1	229
				Mathematics N2	119/108
40	Northern Cape	Upington	2/12/2016	Mathematics N2	18/13
41	Western Cape	Thornton	17/11/2016	Engineering Science N3	92/61
42	Western Cape	Bellville	2/12/2016	Mathematics N2	215/133
43	Western Cape	Vredendal	17/11/2016	Engineering Science N3	10

*Private Colleges

4.3 Summary of Findings

Table 4B provides a summary of the observations at the 42 sites monitored for the writing of NC (V) and NATED Report 190/191: Engineering Studies N2-N3 examinations.

Table 4B: Findings from examination centres monitored for the writing of examinations

Criteria	Findings and Challenges	Centres Implicated
Delivery and storage of examination material before writing	Twenty-eight (65%) centres complied fully with criteria governing the delivery and storage of examination material before the commencement of the writing session.	Bellville Benoni Berea Technical College – Durban Central Technical College – Durban (2) Ellisras Ezibeleni Giyani Ikage SD College Innovatus – Durban Jengrac College – Sebokeng JFA Square Technical Training Institution King Majuba Technology Centre Namaqualand Newcastle Technology Centre Port Shepstone Randfontein Ressuct Centre for Skills Rustenburg Sasolburg Sundumbili Temba Thaba 'Nchu Thornton Tosa Tshwane City College Upington Vredendal
	At ten of the centres visited (23%), most of the requirements for the storage of examination materials had been met. The following challenges were noted at these centres: • At Taalnet Training Institute the papers were collected from the nodal point in Boksburg by the delegated chief invigilator, but he/she was not in possession of a letter of delegation. • Examination material was not stored in a safe or a locked cabinet at Sandton Technical College. • At Ezibeleni and John Knox Bokwe the question paper was e-mailed	Anitec College Central Technical College – Pretoria Ezibeleni John Knox Bokwe Molapo Ogwini Comprehensive Technical School Sandton Technical College Taalnet Training Institute Watersrand Computer and Business College Witbank

Criteria	Findings and Challenges	Centres Implicated
Delivery and storage of examination material before writing	to the centre on the day of the visit and copies of it had to be made. • At Ogwini Comprehensive Technical School there was no safe/strong room and the papers were stored at a nearby school. • Central Technical College: some of the question papers were not available on the date of the examination and were received via e-mail and copied for the students. This caused delays in the commencement of the examination.	
	• At one centre (2%), limited compliance with the set criteria for storage of examination material was observed by the monitors. Material required on the day of the visit was collected by a college driver. • Material required for this session arrived late, at 08:52, and was taken straight to the centre. There was no secure strong room on the floor where the examination rooms were located.	Khomanani Business College
	• At three centres (7%) satisfactory adherence to the set criteria was observed. • At Churchill Resource College the answer scripts were kept in a very cluttered strong room.	Churchill Resource College Denver Technical College Roseville FET College
	At one centre (2%), the monitor reported a lack of compliance. There was no security to keep examination material safe. Examination materials were stacked on the floor and on a table at the back of the examination hall. The fire extinguisher was last serviced in 2013, with an expiry date of 12/2014. The building was a safety hazard. The lifts did not work. The examination room was situated on the 6th floor with the offices on the 4th floor. The building had been condemned and the college was not allowed to advertise its name on the building.	City View Business College

Criteria	Findings and Challenges	Centres Implicated
The Invigilators and their training	Twenty-seven of the monitored centres (63%) complied fully with the set criteria regarding invigilators and their training.	Bellville Berea Technical College – Durban Central Technical College – Durban (2) Central Technical College – Pretoria Ellisras Ezibeleni Giyani Ikage SD College Innovatus – Durban JFA Square Technical Training Institution John Knox Bokwe King Majuba Technology Centre Molapo Namaqualand Port Shepstone Rustenburg Sasolburg Sundumbili Thaba 'Nchu Thornton Tosa Tshwane City College Upington Vredendal Watersrand Computer and Business College
	Six centres (14%) complied partially with the criteria for invigilators and their training: • The chief invigilator (the campus manager of Taalnet Training Institute) was not available on the day of the visit to the centre and the acting invigilator did not have a letter of delegation. • At one of these centres, the chief invigilator did not have an appointment letter and had not been trained. • At four of these centres, invigilators could not all produce appointment letters or signed appointment letters.	Churchill Resource College Denver Technical College Ogwini Comprehensive Technical School Sandton Technical College Taalnet Training Institute Temba
	Four centres (9%) showed very limited compliance with the requirements regarding invigilators and their training. The main areas of neglect observed at these centres were: • Appointment letters and/or evidence of training were not available at these four centres. • At one centre, administration	Anitec College City View Business College Ressuct Centre for Skills Roseville FET College

Criteria	Findings and Challenges	Centres Implicated
The Invigilators and their training	officials assisted with the invigilation but carried no identification. • Letters of appointment were not valid for the November/December examinations at two centres.	
	The five centres concerned (12%) mostly complied with the criteria for the appointment and training of invigilators. However, minor problems were observed in the following areas: • Proof of training was not available at three of the centres • At one centre, the invigilators could not all produce their signed appointment letters.	Benoni Jengrac College – Sebokeng Newcastle Technology Centre Randfontein Witbank
	At one centre (2%), no compliance with the requirement for invigilators and their training was observed by the monitor. Neither the chief invigilator (director) nor the invigilators (lecturers) had appointment letters. No evidence of training could be provided.	Khomanani Business College
Preparations for writing and the examination venues	Six centres (14%) demonstrated adherence to all the monitoring criteria set by Umalusi for the preparation of examination venues.	Berea Technical College – Durban Central Technical College – Durban Ezibeleni JFA Square Technical Training Institution Majuba Technology Centre Sasolburg
	Four of the centres monitored (9%), complied only in a limited way with the criteria for monitoring the preparation of examination venues. At these centres, the following lapses occurred: • No directions to examination room. • No seating plan available. • No clock in several of the examination rooms. • No invigilators' attendance register signed on the day of the monitoring visit. • Invigilators were not wearing name tags. • No examination file or only some documents were available. • ID and examination permits were not verified before admitting candidates to the examination venue. • At one examination venue the environment was not conducive to the writing of examinations.	Churchill Resource College Khomanani Business College Sandton Technical College Tshwane City College

Criteria	Findings and Challenges	Centres Implicated
Preparations for writing and the examination venues	• There were calculations and charts on walls in one room; according to the chief invigilator, however, these calculations did not relate to the subject and had therefore not been removed. • Two candidates had students' cards for Hillcross Business College but admission letters for the monitored centre (Khomanani Business College). • One candidate had an admission letter that did not indicate the right date or subject for the monitored session; nonetheless he/she was allowed to write. During the packaging of scripts, one did not appear on any of the mark sheets and WAS NOT PACKED. • Cell phones were allowed in the examination venue. • A chief invigilator used his cell phone during the examination and two candidates left the examination venues to answer their cell phones.	
	Twenty-one centres (49%) demonstrated compliance with most of the monitoring criteria for the preparation of venues.	Bellville Benoni Central Technical College – Durban Ellisras Giyani Innovatus – Durban King Molapo Namaqualand Newcastle Technology Centre Port Shepstone Randfontein Rustenburg Campus Thaba 'Nchu Thornton Tosa Upington Vredendal Watersrand Computer and Business College Denver Technical College Witbank

Criteria	Findings and Challenges	Centres Implicated
Preparations for writing and the examination venues	Twelve of the monitored centres (28%) demonstrated satisfactory adherence to the criteria for the preparation of venues. The following areas of neglect were observed by monitors: • At one centre, the prescribed ratio (1:30) had not been adhered to. • Not enough seating to accommodate all candidates. • Neither relief invigilator nor invigilator attendance registers could be produced. • No examination file or only limited information had been filed. • A candidate's cell phone rang during the examination. • At one centre (Ressuct Centre for Skills), the Umalusi monitor found the Mathematics parcel, opened, in the principal's office. • No seating plans were available and candidates were seated randomly. • At one centre (Central Technical College) no drawing boards were provided to the candidates and they had to use their flat tables.	Anitec College Central Technical College – Durban City View Business College Ikage SD College Jengrac College – Sebokeng John Knox Bokwe Ogwini Comprehensive Technical School Ressuct Centre for Skills Roseville FET College Sundumbili Taalnet Training Institute Temba
Time management	Time management at 15 centres (35%) was in accordance with all the set criteria.	Bellville Benoni Berea Technical College – Durban Central Technical College – Durban (2) Ellisras Giyani Ikage SD College Innovatus – Durban JFA Square Technical Training Institution Namaqualand Temba Thaba 'Nchu Tosa Upington
	Twenty-three centres (54%) adhered to most criteria in a satisfactory way as far as time management was concerned. The following problem areas were observed: • Candidates arrived late at the examination centres owing to transport difficulties. • Papers were delayed, e.g. Industrial Orientation N3, and further delays were caused by the printing of	Anitec College Central Technical College – Pretoria Denver Technical College Ezibeleni Jengrac College – Sebokeng John Knox Bokwe King Campus Majuba Technology Centre Molapo Newcastle Technology Centre Ogwini Comprehensive Technical School

Criteria	Findings and Challenges	Centres Implicated
Time management	e-mailed papers. This resulted in delayed starts to examinations. • The candidates were not given ten minutes to read through their question papers.	Port Shepstone Randfontein Roseville FET College Rustenburg Sandton Technical College Sasolburg Sundumbili Thornton Tshwane City College Vredendal Watersrand Computer and Business College Witbank
	Five centres (12%) demonstrated no compliance with the Umalusi criteria for time management. • Candidates were admitted late to the examination room. • Question papers were distributed late. • At one centre, the wrong papers were delivered by the DHET. • The examination rules were not read out to candidates. • The question papers were not checked for technical accuracy. • Candidates were not given time to read the question paper before writing (ten minutes).	Churchill Resource College City View Business College Khomanani Business College Ressuct Centre for Skills Taalnet Training Institute
Checking of environment	Nine centres (21%) observed by the monitors did not comply with the monitoring requirements set by Umalusi. At these centres, the invigilators did not check male or female ablution facilities for material that could have been used by candidates to cheat.	City View Business College Ezibeleni John Knox Bokwe Khomanani Business College Newcastle Technology Centre Ogwini Comprehensive Technical School Thornton Watersrand Computer and Business College Witbank
	Thirty-four centres visited (79%) checked the ablution facilities before the commencement of the examination session for any material that could be used by candidates to cheat.	Anitec College Bellville Benoni Berea Technical College Central Technical College - Durban (2) Central Technical College - Pretoria Churchill Resource College Denver Technical College Ellisras Giyani Ikage SD College

Criteria	Findings and Challenges	Centres Implicated
Checking of environment		Innovatus – Durban Jengrac College – Sebokeng JFA Square Technical Training Institution King Majuba Technology Centre Molapo Namaqualand Port Shepstone Randfontein Ressuct Centre for Skills Roseville FET College Rustenburg Sandton Technical College Sasolburg Sundumbili Taalnet Training Institute Temba Thaba 'Nchu Tosa Tshwane City College Upington Vredendal
Activities during the writing process	Twenty of the centres (47%) complied with all the set criteria.	Bellville Central Technical College – Durban City View Business College Ellisras Giyani Ikage SD College Innovatus – Durban John Knox Bokwe Majuba Technology Centre Newcastle Technology Centre Port Shepstone Ressuct Centre for Skills Roseville FET College Rustenburg Sandton Technical College Sasolburg Sudumbili Thaba 'Nchu Thornton Tosa
	Nine of the centres (21%) failed to comply with most of the criteria. They did for example not assist candidates to complete the cover page of the examination book.	Anitec Benoni Berea Technical College Churchill Resource College Ezibeleni Temba Upington Vredendal Witbank

Criteria	Findings and Challenges	Centres Implicated
Activities during the writing process	One centre (2%) did not comply with the criteria. At this centre, an unregistered candidate wrote the examination paper. No seating plan was available, candidates were admitted to the examination room without proper identification and the paper was not checked for errors. The invigilators did not move around the room and the examination rules were not read out to candidates. The examination did not start on time and the stipulated space between the rows was not adhered to. One candidate was found with "crib" notes.	Khomanani Business College
	One of the centres (2%) complied to a limited extent with the set criteria. At the Taalnet Training Institute, invigilators remained seated at times, not all candidates were accompanied to the toilet and candidates left the examination room during the last fifteen (15) minutes of the session. One learner had a cell phone.	Taalnet Training Institute
	Eleven of the centres (26%) complied partially with the set criteria. The following challenges were observed: • At Thornton and Tshwane City College candidates were not accompanied to the toilet. • At Churchill Resource College the cover page of the examination papers was not checked. • At Molapo the examination papers arrived late. • At Newcastle Technology Centre the monitor reported that according to the chief invigilator a candidate was caught with crib notes and this was reported to the Department. • At King there were no female invigilators for the monitored session. Male invigilators were forced to escort female candidates to the toilet. • At King one candidate had no ID and he was allowed to write, this was captured as an irregularity. • At Tshwane City College, two candidates had their cell phones with them, when they rang, the candidates went out to reply them.	Central Technical College – Pretoria City View Business College Churchill Resource College Denver Technical College Ezibeleni King Molapo Newcastle Technology Centre Thornton Tshwane City College Watersrand Computer and Business College

Criteria	Findings and Challenges	Centres Implicated
Packaging and transport of scripts after writing	At 26 of the 43 monitored centres (60%), the packaging and transport of scripts after the examination had been conducted strictly in accordance with the set criteria. In most cases, the examination rooms were used to count and pack the scripts after candidates had left. This was done by the chief invigilator and the invigilators responsible for that examination. The scripts were packed in numerical order, according to the mark sheet and carefully cross checked. The scripts had been sealed in the plastic bags provided by the DHET and locked in the safe or dispatched to the marking centres or nodal points. It must be noted however that many of these sites did not submit daily irregularity reports to the DHET.	Anitec College Bellville Benoni Berea Technical College Central Technical College – Durban (2) Central Technical College – Pretoria Ellisras Ezibeleni Ikage SD College Innovatus – Durban JFA Square Technical Training Institution John Knox Bokwe Majuba Technology Centre Molapo Namaqualand Newcastle Technology Centre Port Shepstone Roseville FET College Sasolburg Temba Thaba 'Nchu Tosa Tshwane City College Upington Vredendal
	At four centres (9%) partially compliance with the set criteria was observed. At Watersrand Computer and Business College no situational report was completed and two candidates commenced late with the writing of the paper due to clashes on their time table.	Khomanani Business College City View Business College Watersrand Computer and Business College Witbank
	Thirteen of the centres monitored (30%) complied with most of the monitoring criteria for the packaging and dispatch of scripts.	Churchill Resource College Denver Technical College Giyani Jengrac College – Sebokeng King Ogwini Comprehensive Technical School Randfontein Ressuct Centre for Skills Rustenburg Sandton Technical College Sundumbili Taalnet Training Institute Thornton

4.4 Areas of Good Practice

Some areas of compliance were observed by the monitors:

- Twenty-five (65%) met all the criteria for the delivery and storage of examination material;
- Twenty-seven of the monitored centres (63%) complied fully with the criteria for invigilators and their training;
- Thirty-four centres (79%) checked the immediate environment before the commencement of the examination for any material that could have been used by candidates;
- Chief invigilators at 26 centres (60%) completed a daily situational report before scripts were transported to the assessment body; and
- At 26 of the 43 centres monitored (60%), the packaging and transport of scripts after an examination was conducted strictly according to the set criteria.

4.5 Areas of Concern

Areas of serious concern were observed at certain of the sites:

- The inability of the GPW to honour its printing and distribution contract with the DHET and the subsequent e-mailing of question papers that then had to be duplicated at centres posed a high security risk for the examinations. This was a breach to the norms and standards for the safekeeping of examination question papers;
- Khomanani Business College and City View Business College in particular did not comply with all the criteria for the monitoring of the writing of examinations and this might have compromised the examination. For example, these sites did not follow the rules for the delivery and storage of examination material; security; the training and appointment of invigilators; and rules for the conduct of the examination; and
- Time was not managed effectively at five centres (12%).

4.6 Directives for Compliance and Improvement

Serious concerns were raised during the monitoring process. The DHET must ensure that:

- Measures are put in place to prevent a repetition of the disruptions resulting from the GPW's failure to honour its contract and reproduce and deliver question papers on time;
- The Examination Centre status of colleges that did not comply with basic requirements for the conduct of examinations be revoked; and
- The examination results of City View Business College and Khomanani Business College be blocked.

4.7 Conclusion

The failure of the GPW to print and distribute question papers on time had a damaging effect on the November 2016 NC (V) and NATED Report 190/191: Engineering Studies N2-N3 examinations.

Colleges conduct examinations regularly. It is therefore expected of them that they are aware of and apply the principles of effective examination management. Furthermore, the DHET communicated clear guidelines for the administration of examinations to all examination centres. Reports received make it clear, however, that several aspects of the conduct of examinations were not observed. These malpractices are of serious concern as they could compromise the examination and the credibility of the qualification. Punitive measures should be taken to deal with sites that repeatedly contravene the rules and are guilty of malpractice.

CHAPTER 5: MONITORING OF MARKING

5.1 Introduction and Purpose

In accordance with the National Policy Pertaining to the Conduct, Administration and Management of the examinations for the Technical and Vocational Education and Training (TVET), the Department of Higher Education and Training (DHET) takes complete responsibility for the credible conduct, administration and management of the marking of examinations in the qualifications it is registered and accredited to offer.

Umalusi is mandated to verify the extent to which the conduct, administration and management of marking processes at marking centres comply with legislation governing examinations administered by the DHET.

This chapter reports on the findings of the monitoring of the conduct of marking of examinations conducted and managed by the DHET. The report acknowledges areas of good practice and areas of concern observed during the monitoring of the marking across marking centres, and issues directives for compliance and improvement with which the assessment body must comply.

5.2 Scope and Approach

Umalusi deployed monitors to a sample of DHET marking centres in seven provinces. In addition, Umalusi staff monitored four marking centres.

Data used to compile this report were gathered from on-site monitoring of the marking centres, interviews and observations by Umalusi staff and monitors, using an instrument designed for this purpose.

Tables 5A and 5B below provide an account of the province, centre and dates on which the respective marking centres were visited.

Table 5A: Marking centres monitored by Umalusi monitors

Qualification	Province	Centre	Date
N2	KwaZulu-Natal	Umgungundlovu TVET College: Midlands Campus	7/12/16
N2	Western Cape	College of Cape Town: Thornton Campus	3/12/16
N2*	Eastern Cape	Port ElizabethTVET College:Iqhayiya Campus	6/12/16
N2	Free State	Motheo TVET College: Hillside View Campus	27/11/16
N2*	Limpopo	Capricorn TVET College: Seshego Campus	8/12/16
N2	Mpumalanga	Nkangala TVET College: Mpondozankomo Campus	3/12/16
N2	North West	Orbit TVET College: Rustenburg Campus	7/12/16

*Certain N3 subjects with high enrolments and or specialised N3 subjects were also marked at these sites.

Table 5B: Marking centres monitored by Umalusi staff members

Qualification	Province	Centre	Date
N3	Gauteng	Tshwane South TVET College: Pretoria West Campus	3/12/16
Level 4		Ekurhuleni East TVET College: Springs Campus	
Level 4	KwaZulu-Natal	Thekwini TVET College: Asherville Campus	
N2-N3	Gauteng	Tshwane South TVET College: Centurion Campus	

5.3 Summary of Findings

5.3.1 Monitors' findings

The findings below are in accordance with the criteria for monitoring the marking of examinations prescribed by Umalusi.

a) Planning for marking

Detailed management plans were presented and scrutinised. Monitors observed that centre managers had monitored the progress across all the marking activities according to the approved management plan. A comprehensive list of marking and administrative personnel had been maintained by centre managers. All markers, with a few exceptions, arrived at the marking centre on the stipulated date. Some managers (e.g. at Iqhayiya) mentioned that marking guidelines arrived a little late and this meant a change to the commencement date and time of marking. However, these centre managers worked extra hours to make up for the lost time. All monitors reported that the marking rate corresponded to the management plan and that completion of marking would not be compromised.

b) Marking centres

The marking centres were well chosen as all communication infrastructure was available. The centres were equipped with appropriate furniture. No provision was made for accommodation or meals for markers at any of the marking centres. At some venues, no cafeteria was available and markers were required to bring their own meals. However, almost all centres began marking between 7:00 and 7:30 and concluded the day at around 19:30.

Adequate control of scripts was observed at all centres. The marking centre received a record of centres from which scripts in all the subjects that were to be marked at the centre would be received. On receipt of the scripts, the examination assistants (EA) verified them against the mark sheets.

c) Security

There was adequate security at all marking centres. Of the seven centres monitored, at six:

- The premises were under 24-hour surveillance;
- An alarm system had been installed and was linked to armed response;
- There were fire extinguishers inside the building to protect all the examination material in case of fire;
- Security gates and burglar doors had been installed.

Although there were adequate security personnel at the gates, at some marking centres cars were not checked. Furthermore, at one marking centre there was no record of markers signing in or out at the main security gate.

All scripts were transported to the marking centres by Sky Net Courier Services. The security personnel accompanied the EA when scripts were moved from the control centres to the marking venues and vice versa.

d) Training of marking personnel

All marking centre managers (MCM) and deputy managers were trained by the DHET in Pretoria. Documents to this effect were verified on-site.

The chief markers and internal moderators were trained by the MCM on their arrival at the marking centre. Chief markers and internal moderators were responsible for training all markers and EA.

Marking personnel were provided with dummy scripts to mark. Immediate training was provided where problems were identified.

e) Marking procedure

Once the marking guidelines had been confirmed at the marking guideline discussion meetings, no changes were allowed. At those centres monitored, fairly good quality assurance processes were in place to ensure that an entire script had been marked. It was noted, for instance, that each marker was provided with a unique code. It was clear that one of the most critical responsibilities of the senior marking personnel (i.e. chief marker and the internal moderator) was the monitoring and moderation of the quality of marking and the recording of their findings against the marker's code, should any discrepancies be found. This allowed for further interventions and support to take place.

Markers' attendance registers were controlled and monitored by the respective chief markers.

f) Monitoring of marking

The rate and quality of marking were very closely monitored by the chief marker, assisted by the internal moderator. A further quality assurance process ensured that the computation and transfer of marks to the cover page was correct. There were procedures to monitor underperforming markers. These markers were to be provided with additional support in areas where their lack of competence or inconsistency was identified. It was emphasised that in all such cases, training was to be provided by the chief marker and the internal moderator. Thereafter, the quality of marking by the marker concerned would be closely monitored. This evaluation of markers was adopted by the DHET to ensure appropriate appointments in the future.

g) Handling of irregularities

The protocol for dealing with examination irregularities forms one of the most critical quality assurance directives that the assessment body must promote, manage and maintain. It was emphasised that the handling of examination irregularities was discussed during the training session offered by the MCM and that all markers had been made aware of the procedure to be followed when an irregularity was detected. The most crucial aspect of this procedure is that:

- Markers must inform their respective chief marker and internal moderator immediately; and
- It is the duty of the chief marker to discuss the matter with the irregularity committee, which is chaired by the MCM.

The irregularity committee comprises the MCM, chief markers, internal moderators (of the subject in which the irregularity has occurred), relevant marker and the script control manager. It was noted that the committee was aware of its mandatory roles and responsibilities as this had been documented in the presentation made during the training of marking personnel.

At one marking centre, three types of irregularities were identified while the Umalusi monitor was present, namely: scripts with different centre numbers, notes on calculator covers (crib notes) and candidates with identical correct and incorrect answers. Due process was followed at the marking centre concerned and the monitor included the irregularities in his report to Umalusi.

h) Quality assurance procedures

Checks and balances are in place to quality assure each step of the marking process. After the entire script has been marked, the respective codes of the markers are added to the script. The Examination Assistants, who are on duty at all times in the examination venue, checks that all sections of the script have been marked, that sub-totals are correct and all other computation procedures have been completed. The EA then adds his/her code to the script. Finally, the chief marker and internal moderator ratify a sample of all scripts.

i) Reports

It is the responsibility of the chief marker to evaluate each marker under his/her supervision. The reports are then forwarded to the DHET, which assists in future appointments of markers. However, the chief marker made mention that the DHET should implement these recommendations more stringently as underperforming markers were still being reappointed.

The chief marker and internal moderator compile detailed reports on the subject, identifying all the strengths and weaknesses related to the quality of the question paper and marking guidelines as well as the marking process. It is the duty of the deputy MCM: academic to ascertain that all reports meet specific standards before they are submitted to the DHET.

5.3.2 Findings by Umalusi staff

Table 5C below reflects the observations of the Umalusi staff at the Asherville, Centurion, Springs and Pretoria West marking centres on 3 December, the date on which the majority of the NC (V) L4 and N3 marking guidelines were conducted.

Table 5C: Findings by Umalusi Staff

Criteria	Findings
Preparations for marking	The marking centres had appropriate infrastructure and facilities to support the marking process. The names of the subjects marked in each venue were displayed on the doors. All centres had enough rooms to accommodate the marking personnel in the various subjects, with the exception of six N3 subjects, which were all marked in one room at Pretoria West. This was not a suitable environment, particularly during the marking guideline discussions. Preparations were made for live and dummy scripts for sample marking. Large enough rooms such as halls were available at all centres for the control of scripts. The necessary communication facilities (fax machine, telephone and internet access) were made available at all centres. There were adequate and very clean ablution facilities with the exception of Springs marking centre, where there were adequate ablution facilities but these were not in a good condition. The official marking hours were from 07:00 to 19:00. Marking centres had adequate security personnel at the gates and visitors were required to sign a register before entering.

Criteria	Findings
Management of answer scripts and mark sheets	The marking centres received a record of centres from which scripts for all the subjects were expected with the exception of Afrikaans, which was not on the list at Springs marking centre. On receipt of the scripts, the EA verified the scripts against the mark sheets. Asherville and Centurion marking centres had not received all the expected scripts at the time of monitoring. There were discrepancies which were declared as technical irregularities. At Centurion, it was discovered that candidates had been marked present but their scripts were missing and vice versa. The examination centres were contacted to submit the seating plan or any alternative evidence that students had been present. At Springs, the effective distribution of scripts occurred and the security personnel escorted the EA. All marking centres did data capturing onsite: the data capturer captured the marks and all marks were verified and sent electronically to the DHET. Hard copies were sent by courier to the DHET.
Appointments and training	NC (V) markers were recruited in May and NATED Report 190/191: Engineering Studies markers in March 2016. Shortages occurred and some markers/chief markers/internal moderators in subjects had not been appointed by the time of the marking guideline discussions, e.g. Business English N3 and Afrikaans FAL. Evidence of the appointment of the marking centre management staff was available. Markers were trained by the MCM and subject specific training was done by the chief markers and internal moderators. Some markers did not attend the MCM's training session. Daily meetings were held by the MCM, chief markers and internal moderators to discuss pertinent issues.
Attendance at marking guideline discussions and sample marking	Markers were asked to bring their own worked out marking guidelines to the marking centres. The internal moderator for Water Treatment Practice N3 arrived with an incorrect and incomplete marking guideline. Absenteeism/shortages of marking personnel were observed in some of the subjects. In the case of subjects that were to be marked in other provinces, marking guidelines were standardised, signed off and sent to the marking centres via Dropbox. Scripts were prepared in time for dummy script marking and sample marking.
Moderation of marking	The chief marker and internal moderator moderated a whole script. The management team monitored the moderation process from the outset to ensure that there was evidence of moderation at an early stage of marking.

Criteria	Findings
Reports	The necessary infrastructure(computers) was in place for the preparation of reports. Chief markers and internal moderators for every subject were to write comprehensive reports on the marking process, highlighting any difficulties experienced in the marking process. The DHET provided standardised templates to all MCM in order to ensure consistency in reporting. The marking centre manager and the deputy marking centre manager administration are held accountable for the quality of the chief marker and internal moderation of marking reports.
Dealing with irregularities	There was a prescribed process in place to follow when reporting and dealing with irregularities. An irregularity committee was established and it would meet on a daily basis.

5.4 Areas of Good Practice

The following areas of good practice were noted:

- The marking plan was closely monitored and adhered to;
- The criteria for selection of marking venues was fairly conducted, especially in the case of infrastructure;
- The integrity of the marking process was not compromised;
- Good control of the flow of scripts was observed; and
- An additional process, where each script received was stamped to prevent others from being inserted in the pile was observed at Springs marking centre.

5.5 Areas of Concern

The following practices raised concerns:

- Monitoring by the assessment body was not evident at the marking centres monitored by Umalusi;
- Late arrival of marking guidelines had implications for the determined norm time;
- Reappointment of underperforming markers was observed;
- Some markers were inadequately prepared for the marking guideline discussions; and
- Some markers did not attend the MCM's training session.

5.6 Directives for Compliance and Improvement

- Evidence to indicate monitoring by the assessment body must be made available.
- Marking guidelines must be despatched in good time to allow marking to start on schedule.

- The evaluation of markers' performance forms must be considered when appointments are made.
- Marking staff who do not attend the MCM training sessions or the training at the marking guideline discussions must not be allowed to mark.
- The DHET must ensure that accurate information concerning subjects to be marked at a specific marking centre is communicated to the marking centres.
- The directive that all marking staff must come prepared (with their own worked out marking guideline) to the marking guideline discussions must be enforced.

5.7 Conclusion

The marking centres were well managed. Management teams were experienced as the same marking centre management teams, with the exception of a few new appointments, were responsible for the marking process for a number of examinations. The systems and processes that were in place require further refinement to improve processes and ensure compliance.

CHAPTER 6: MONITORING OF MARKER SELECTION AND APPOINTMENT

6.1 Introduction and Purpose

The effective recruitment, appointment and training of marking staff are essential steps in ensuring the implementation of a credible marking process.

In the past, Umalusi, monitored the process of recruitment and appointment of marking personnel for provincial and national marking centres and reported briefly on this process. This year, the scope and sampling has been increased to pay more attention on areas that were not addressed previously.

The Department of Higher Education and Training (DHET) distributed an invitation (Memorandum 04 of 2016 dated 21 January 2016) to colleges and campuses, encouraging lecturers who fulfilled the criteria to apply to mark the 2016 examinations. All duly completed, signed and recommended (by the head of department (HOD), campus manager and deputy principal: academic) applications were to be accompanied by certified copies of the applicant's identity document, highest qualification, academic record in the subject in question and SACE registration certificate. Non-South Africans were also requested to submit copies of their work permit, passport and proof of residence. Each college submitted a schedule of applications (a list of all applicants) per qualification (NATED or NC (V)).

The purpose of this section of the report is to provide an account of the process as it was observed by Umalusi staff members.

6.2 Scope and Approach

Umalusi staff monitored the evaluation of applications and the marker selection process for the NATED Report 190/191: Engineering Studies for the April, August and November 2016 examination cycle. This took place at the DHET on 12 and 13 March 2016. In addition:

- The application forms from a sample of applicants in a sample of subjects were audited; and
- Data from applicants (spreadsheet containing information of all applications received) and markers appointed for the NATED Report 190/191: Engineering Studies examinations were audited.

Applications received from all provinces to mark key subjects were included in the monitoring process. Furthermore, owing to difficulties experienced when marking Industrial Orientation N3 during the November 2015 examination, the recruitment for this and two related subjects was observed closely. General observations were also made about other subjects. Table 6A below indicates the subjects included in the audit process.

Table 6A: Subjects included in the audit of marker selection and appointment process

Subject	Level
Mathematics	N2 and N3
Engineering Science	N2 and N3
Industrial Electronics	N2 and N3
Electro-technology	N3
Industrial Orientation	N3
Industrial Organisation and Planning	N3
Supervision in Industry	N3

The management of each marking centre was provided with an opportunity to select and recommend marking staff in accordance with the stipulated criteria contained in the Personnel Administrative Measures (PAM), chapter E, and paragraph 4.1 to 4.3 of the Employment of Educators Act 76 of 1998. The following criteria from these documents were applied in the selection of markers:

- A marker should have a minimum of three-year post-matriculation qualification, which includes the subject concerned at second or third-year level, or any other appropriate post-matric qualification;
- A marker should have extensive experience as an educator in the particular subject or a related subject and at least two years' teaching experience in the subject or other curriculum related experience within the last five years, at the appropriate level currently and/or within the last two years;
- Preference will be given to serving college-based educators in persal or council posts; and
- Language competency.

The policy indicates that where there is no suitable candidate, the HOD concerned may approve the appointment of a suitable candidate with another, appropriate post-school qualification, or with less than the required experience, after consultation in this regard with the relevant unions. In addition, a certain number of new appointments should be included to build capacity among serving educators.

In an attempt to solve the recurring challenge of a shortage of marking personnel in certain subjects, the DHET planned to mark particular subjects at more centres than in the past, or at specific marking centres. Engineering Science N3, Mathematics N3, Industrial Electronics N3 and Electro-technology N3 were identified as subjects that had in the past presented difficulties in the recruitment of an adequate number of markers. The intention was to mark these four N3 subjects at provincial marking centres rather than at the national marking centre only.

An evaluation checklist containing the following information was completed for each candidate by the evaluators:

- Number of years' teaching (lecturing) the particular subject at the appropriate level;
- Year in which the subject was last taught at this level;
- Application signed by applicant; immediate supervisor/HOD; campus manager and deputy principal: academic;
- Application endorsed by immediate supervisor/HOD; campus manager; and deputy principal: academic;
- A certified copy of the identity document of the applicant;
- Evidence that the applicant had an appropriate qualification in the particular subject;
- Recommendation by the DHET selection panel and the position (marker, chief marker, internal moderator, reserve list or not eligible – with a reason if not eligible); and
- Surname, initials and signature of the evaluator.

Applicants indicated the position they were applying for on their application forms.

The DHET required all appointed markers to submit a response form (an acceptance of appointment form). In addition, they were sent the conditions of appointment, duties of marking officials and house rules. Each marker signed a personal declaration form and submitted it with a "release for marking duties" form signed by his or her manager.

6.3 Summary of Findings

The marker selection panel consisted of DHET officials, marking centre managers and the deputy marking centre managers of both the national and the provincial marking centres. South African Democratic Teachers' Union (SADTU) maintained its observer status. In addition, a representative from the Free State Regional office attended the meeting held from 12–13 March 2016.

The purpose of the meetings was not only to evaluate the applications and make recommendations for the appointment of markers, chief markers and internal moderators, but also to reinforce the marking centre management teams' responsibilities and to address areas of concern. New developments in terms of assessments and other related matters were also shared in order to motivate and support high quality vocational training and education in South Africa.

The table below indicates the number of applications received per province for the four subjects that the DHET intended to mark at provincial level instead of national level. Marking was not conducted in the Northern Cape during the April and August examinations and no application forms from this province were available for scrutiny.

Table 6B: Number of applications received per subject per province

Subject and Level	Eastern Cape	Free State	Gauteng	KwaZulu-Natal	Limpopo	Mpumalanga	North West	Western Cape	Total number of applications
Electro-technology N3	3	3	44	26	9	5	0	1	91
Engineering Science N3	4	9	73	20	38	11	2	1	158
Industrial Electronics N3	1	5	54	19	22	11	0	1	113
Mathematics N3	13	11	98	61	77	11	3	8	282

As is evident from Table 6B, only a very small number (or none at all) applications were received for certain subjects in some of the provinces.

Table 6C below captures the findings of the audit of the recruitment and appointment process. All numbers indicated refer to the audited sample.

Table 6C: Findings of audit of recruitment and appointment process

Aspect	Findings	Challenges or examples
Procedures to be followed during the application process	Memorandum 04 of 2016 was sent to all the sites of delivery, clearly stipulating the process to be followed.	
Application forms	The application form used in the past was reviewed and the following additional information was included: • Deputy principal: academic should approve applications; and • Information on the performance/ results of an applicant's students in the 2014 and 2015 examinations.	Some deputy principals did not ensure that the application forms were completed in full before signing the application forms. Information on performance not indicated or incomplete
Completion of Application Forms	Applicants did not appear to take the application process seriously. Several forms were incomplete, missing one or more of the following: • Marking experience	No indication of marking experience on application forms: • Eight of 20 Engineering Science N3 • Three of nine Industrial Electronics N3 • One of 11 Industrial Electronics N2 • Two of seven Electro-technology N3 • Six of 30 Mathematics N3 • Five of 14 Mathematics N2

Aspect	Findings	Challenges or examples
Completion of Application Forms	• Performance of candidates	Information on candidates' performance omitted: • One of 20 Engineering Science N3 • Five of 11 Engineering Science N2 • Three of nine Industrial Electronics N3 • Two of 11 Industrial Electronics N2 • Two of seven Electro-technology N3 • Six of 30 Mathematics N3 (plus three indicated for only one examination)
	• No SACE registration or qualifications attached	No evidence of SACE registration: • Two of 20 Engineering Science N3 • One of nine Industrial Electronics N3 • Two of 11 Industrial Electronics N2 • Three of seven Electro-technology N3 • Five of 30 Mathematics N3 • One of 14 Mathematics N2
	• In addition, many of the applicants were only provisionally registered by SACE.	Twelve of the 20 Engineering Science N2 applicants
	Many applicants did not have a teaching qualification.	Forty-nine of 102 evaluated applications reflected no teaching qualification.
	Pass rate for subject applied for was below 50%.	Twelve of the 68 applicants.
	Inconsistent implementation of the criteria and inconsistent recommendations by evaluators were observed.	• Applicant (BEd with Mathematics II) and good results (64–91%) was rejected as marker, while one with a National N Diploma, provisional SACE registration and mediocre results (33–61%) was recommended as an internal moderator. • Applicant with an STD but no indication of his/her marking experience or performance (pass percentage) was recommended as chief marker. • Applicant with no marking experience and only four years' teaching experience was recommended as internal moderator. • Applicant with N6 was appointed as marker for Mathematics N2. • Applicant with one year's teaching experience was recommended as chief marker for Engineering Science N3.

Aspect	Findings	Challenges or examples
Appointment of Marking Personnel for NATED N2 and N3	The requirements of the Personnel Administrative Measures (PAM) document (Government Gazette no 19767 of 18 February 1999) are open to different interpretations, for example: the stipulation of "a three-year post school qualification, or other recognised post school qualification".	Applicants with an N3 or N6 certificate or diploma without industry/workplace experience were recommended or appointed as markers.
	Memorandum 4 of 2016 indicates that an applicant must have taught the subject within the last year at the appropriate level.	Many experienced markers were excluded under this rule, for example: • experienced staff who were currently teaching the subject at a higher level (e.g. N6); • staff who had been promoted (e.g. to subject head); • staff currently teaching related subjects in other qualifications or programmes.
	However, on scrutiny of the applications it was found that some markers/chief markers/internal moderators who had been appointed did not meet all the criteria: e.g. they were not currently teaching the subject, or had not taught the subject in the last year.	Engineering Science N2 – marker last taught the subject in 2004. Engineering Science N3 – marker last taught the subject in 2013. Supervision in Industry N3 – internal moderator last taught the subject in 2008.
	Applicants submitted applications for more than one subject and more than one level. A candidate could go through the initial screening process and be recommended for appointment for a number of subjects. This complicated the appointment process and contributed to the shortage of markers.	The only candidate recommended for Supervision in Industry N3 was appointed for another subject. Seven applications were received for Industrial Orientation N3. Six of these applicants had also applied for Supervision in Industry N3. Only four people applied to mark Industrial Organisation and Planning N3 – two of them also applied to mark Supervision in Industry.
	Only a small number of applications were received for the four N3 subjects that were to be marked at provincial instead of national level (in some of the provinces).	Electro-technology N3 Engineering Science N3 Industrial Electronics N3 Mathematics N3
	In some cases, immigrant applicants did not provide evidence that their qualifications had been verified by SAQA.	Applicant for Engineering Science N3
	Where shortfalls in marking personnel for particular NATED subjects occurred, further recruitment was undertaken by the marking centre. Substantial numbers of additional marking staff were required.	An additional 63 markers/chief markers/ internal moderators were appointed for N2 and N3 subjects at Centurion marking centre.

Aspect	Findings	Challenges or examples
Appointment of Marking Personnel for NATED N2 and N3	The following observations concern the appointment of additional markers at the marking centres:	
	All, or almost all, of the marking personnel responsible for the marking of particular subjects were recruited from the same college.	• Supervision in Industry N3: five of the seven markers were appointed from the same college; • Industrial Orientation N3: five of the six markers were appointed from the same college; • Industrial Organisation and Planning N3: four of the five markers were appointed from the same college.
	No supporting documentation was available.	• One of 20 applicants Mathematics N2
	DHET compliance form not completed.	• One of 20 applicants Engineering Science N3
	The application forms of some markers who had been appointed could not be traced. It is possible that an applicant was appointed for a different subject than the one for which he/she had originally applied.	• Two of nine Electro-technology N3 • Seven of 18 Engineering Science N2 • Four of 12 Industrial Electronics N2 • Six of 20 Mathematics N2

6.4 Areas of Good Practice

The monitoring of the DHET process revealed that:

- A system with detailed processes was in place for the recruitment and appointment of marking personnel;
- The application forms for marking staff had been improved; and
- Appointed marking personnel received detailed information on what was expected of them.

6.5 Areas of Concern

The following shortcomings were observed in the process and other matters:

- Multiple applications: e.g. applicants who had applied for more than one subject and for different levels were not identified before the selection process began. A candidate could therefore go through the initial screening process and be recommended for appointment to a number of subjects. This complicated the appointment process and furthermore contributed to the shortage of markers in some subjects;
- The exclusion of experienced markers as a result of adherence to the requirement that an applicant had taught the subject at the particular level during the past two years e.g. lecturer that teaches the same subject or a related subject at a higher level;

- The low number of marker applications received meant that a significant number of marking staff were appointed at the marking centres, not all of whom met all the criteria, e.g. underqualified lecturers recommended for appointment;
- A lack of applications for certain subjects and a lack of qualified individuals to mark certain subjects e.g. Supervision in Industry N3 and Industrial Orientation N3;
- Incomplete application forms e.g. one or more of the following not indicated: experience as marker, performance of students in past examinations, evidence of registration at SACE;
- Unconditional recommendations of applicants who did not meet the requirements or whose application forms were incomplete e.g. applicant with one year's teaching experience was recommended as chief marker for Engineering Science N3; and
- Inconsistent implementation of criteria and double standards when appointing marking personnel e.g. well qualified lecturer with good results rejected whilst a mediocre lecturer recommended as an internal moderator - an applicant (BEd with Mathematics II) and good results of students (64–91%) was rejected as marker, while one with a National N Diploma, provisional SACE registration and mediocre results (33–61%) was recommended as an internal moderator.

6.6 Directives for Compliance and Improvement

The DHET should address the following:

- Criteria for the appointment of marking personnel should be revised to address specific needs of the sector;
- Incomplete application forms should be rejected by college management and the DHET;
- Applications by non-South Africans must be accompanied by evidence that their qualifications have been evaluated by SAQA; and
- Viable solutions must be found to the difficulty of recruiting reputable lecturers who are suitably qualified and experienced to serve as markers/chief markers/internal moderators in certain scarce subjects. Underqualified and inexperienced lecturers with poor examination results must not be appointed.

6.7 Conclusion

The recruitment and appointment of marking personnel still poses many challenges. It was apparent from this monitoring exercise that certain aspects of the process require urgent intervention. The most pressing issue is the recruitment and appointment of suitably qualified and experienced lecturers as marking personnel.

It is important that Umalusi continues to conduct the monitoring process to ensure that the appointment of marking personnel aligns with the criteria and that they provide effective marking and credible results.

CHAPTER 7: MONITORING OF MARKING GUIDELINE DISCUSSIONS

7.1 Introduction and Purpose

An in depth process to finalise the marking guidelines is crucial ensuring that no candidates are advantaged or disadvantaged during the marking process. The main objective of Umalusi's external moderators' participation in the marking guideline discussion process was to ensure a credible and transparent finalisation of the marking guidelines.

Different models were followed to finalise the marking guidelines for the N2 and certain N3 subjects before they were distributed electronically to the provincial marking centres. The N2 marking guidelines were standardised by panels comprising the chief markers from three provinces (Gauteng, North West and Mpumalanga) and the internal moderator of Gauteng, or by panels that consisted of the marking staff (markers, chief marker and internal moderator) of the subject in question. A staggered approach to the marking guideline discussions was followed to ensure the timely marking of all the subjects. The marking guideline discussions for the N2 and certain N3 subjects were conducted on the Saturday following the week in which the subject was written.

The purpose of this section is to report on:

- The preparedness of the marking centres for marking;
- The marking guideline discussion meetings and standard of the finalised marking guidelines;
- The reliability of the systems, processes and procedures as planned and implemented at the marking centres;
- The identification of good practices and areas of concern; and
- Directives for improvement and compliance, based on the findings.

7.2 Scope and Approach

Umalusi's external moderators attended the marking guideline discussion meetings for a sample of N2 and N3 subjects at various marking centres, as outlined in Table 7A and 7B below.

Table 7A: N2 Marking guideline discussion meetings attended

No.	Subject	Date	Marking Centre
1	Building Drawing N2	19/11/16	Centurion
2	Diesel Trade Theory N2	03/12/16	
3	Engineering Drawing N2	19/11/16	
4	Engineering Science N2	26/11/16	
5	Fitting and Machining Theory N2	03/12/16	
6	Water and Waste-water Treatment Practice N2	03/12/16	

Table 7B: N3 Marking guideline discussion meetings attended

No.	Subject	Date	Marking Centre
1	Building Science N3	19/11/ 16	Pretoria West
2	Business English First Language N3 P1	03/12/16	Springs
3	Business English Second Language N3 P2		
4	Electro-technology N3	26/11/16	Pretoria West
5	Engineering Science N3	19/11/16	
6	Industrial Electronics N3	19 /11/16	
7	Mathematics N3	26/11/16	
8	Plating and Structural Steel Drawing N3	19/11/16	
9	Supervision in Industry N3	03/12/16	Centurion
10	Water Treatment Practice N3	03/12/16	Pretoria West

As indicated in Table 7A, Umalusi sent six moderators to the Centurion Campus (Tshwane South TVET College) for the November 2016 NATED Report 190/191: Engineering Studies marking guideline discussions for six N2 subjects.

Marking guidelines for two subjects were finalised by a panel consisting of the chief markers from Mpumalanga, North West and Gauteng, whereas for the remaining four subjects marking guidelines were finalised by the chief marker, internal moderator and markers from Gauteng.

Four moderators were deployed to the Pretoria West Campus to attend the November 2016 marking guideline discussions for seven N3 subjects, as indicated in Table 7B. Moderators were also present at the Springs Campus for two papers of one Business Studies N3 subject.

The external moderators attended the marking guideline discussion meetings in order to report on the standard of the meetings and the preparedness of the marking personnel, as well as to confirm the accuracy of the marking guidelines. The marking guideline discussion meetings were evaluated according to the evaluation criteria and quality indicators set out in Table 7C below.

Table 7C: Evaluation criteria and quality indicators for marking guideline discussions

No.	Subject
Staff attendance	The appointed markers, chief marker, internal moderator and external moderator attended the marking guideline discussion. All participants arrived on time to attend the training session.
Appointment of marking staff	Markers, chief marker(s), and the internal moderator(s) were appointed on time. Marking personnel received their appointment letters before the marking guideline discussions.
External moderation	Recommended changes made to the question paper and the marking guidelines.

No.	Subject
Sample marking	The chief marker or the internal moderator marked a sample of examination scripts before the marking guideline discussion.
Adjustments to the marking guidelines	The chief marker or the internal moderator made appropriate adjustments to the marking guidelines before the marking guideline discussions.
Chairperson of the marking guideline discussion meeting	Management of the marking guideline discussion meeting.
Participants' preparedness for the marking guideline discussions	Chief marker, internal moderator and all the markers came prepared to the marking guideline discussions.
Adjustments to the marking guidelines during the marking guideline discussions	Indication of adjustments made to the marking guidelines during the marking guideline discussions.
Justification for changes to the marking guidelines	Changes made to the marking guidelines are justified.
Influence of changes to the marking guideline on the cognitive level of the answers/ responses	Indication of whether changes to the marking guidelines influenced the cognitive level of the answers/responses required from candidates.
Role of the external moderator in the marking guideline discussions	Role played by the external moderator.
Sample marking of examination scripts	Process of sample marking: Markers received examination scripts to mark after the marking guideline discussion. Markers marked a copy of the same examination script. Markers marked a sample of scripts from a range of examination centres.
Guidance and/or training during the sample marking	Guidance or training provided to markers during the sample marking.
Adherence to marking guidelines during sample marking	Adherence to the marking guidelines during the sample marking.
Markers' and internal moderators' performance during sample marking	Rating of the performance of the markers and internal moderators for sample marking: poor, average, good or excellent.
Measures to address inconsistency in marking or calculation errors during sample marking	Measures to address inconsistency in marking or calculation errors identified during the sample marking process.
Adjustments to the marking guidelines	Adjustments made to the marking guidelines after the sample marking.
General conduct of internal moderators, chief markers and markers	Problems experienced with the internal moderators, chief markers and markers (general conduct).
Signing off of the marking guidelines	The external moderators signed off the marking guidelines.

No.	Subject
Translated marking guidelines	Measures in place to ensure that translated marking guidelines were equivalent to the originals.
Fairness of the question paper	Complaints about: Questions that were ambiguous. Questions that went beyond the syllabus. Questions that were above the level involved.
Minutes of marking guideline discussions	Minutes of the marking guideline discussions submitted to the marking centre manager.
Adjusted marking guidelines submission	Copy of the adjusted marking guidelines submitted to the marking centre manager.
Comments and recommendations	Comments and recommendations on the outcome of the marking guideline discussions.

7.3 Summary of Findings

Tables 7D and 7E present the findings of the marking guideline discussions, as reflected in the external moderator reports. All statistics are indicated in terms of the sample included in the process.

Table 7D: Findings of marking guideline discussions for NATED N2 subjects

Evaluation criteria	Findings and challenges	Sample subjects involved
Attendance/ absenteeism of participants	The chief markers of three provinces (Gauteng, North West and Mpumalanga) and internal moderator of Gauteng attended the marking guideline discussions for two subjects (33%).	Engineering Drawing N2 Engineering Science N2
	The chief markers for four subjects (67%) were from Gauteng only.	Building Drawing N2 Diesel Trade Theory N2 Fitting and Machining Theory N2 Water and Waste-water Treatment Practice N2
	The internal moderator of Gauteng attended the marking guideline discussions for three subjects (50%).	Building Drawing N2 Diesel Trade Theory N2 Fitting and Machining Theory N2
	The internal moderator of Gauteng did not attend the marking guidelines discussion.	Water and Waste-water Treatment Practice N2
	All participants for one subject (17%) were on time.	Engineering Science N2
	Not all participants were on time (83%): some markers were absent without apology.	Building Drawing N2 Diesel Trade Theory N2 Engineering Drawing N2 Fitting and Machining Theory N2 Water and Waste-water Treatment Practice N2

Evaluation criteria	Findings and challenges	Sample subjects involved
Appointment of marking staff	All internal moderators and chief markers for the sampled subjects received their appointment letters before the marking guideline discussions.	Building Drawing N2 Diesel Trade Theory N2 Engineering Drawing N2 Engineering Science N2 Fitting and Machining Theory N2 Water and Waste-water Treatment Practice N2
External moderation changes	The external moderation recommendations and/or changes to the question paper and marking guidelines were applied to 83% of the subjects.	Diesel Trade Theory N2 Engineering Drawing N2 Engineering Science N2 Fitting and Machining Theory N2 Water and Waste-water Treatment Practice N2
	Some of the external moderation recommendations and/or changes to the question paper and marking guideline were not applied in one (17%) of the subjects.	Building Drawing N2
Preparedness of appointed participants	The internal moderator, chief marker and the appointed markers (67%) came prepared to the marking guideline discussion.	Building Drawing N2 Diesel Trade Theory N2 Engineering Science N2 Fitting and Machining Theory N2
	The internal moderator, chief marker and the appointed markers did not come prepared to the marking guideline discussion (33%), e.g. they had not prepared their own marking guidelines.	Engineering Drawing N2 Water and Waste-water Treatment Practice N2
Adjustments to the marking guidelines during the marking guideline discussions	Adjustments were made to 83% of marking guidelines during the marking guideline discussions (e.g. changes to mark allocations) and the adjustments were justified.	Diesel Trade Theory N2 Engineering Drawing N2 Engineering Science N2 Fitting and Machining Theory N2 Water and Waste-water Treatment Practice N2
	No adjustments were made to 17% of the marking guidelines during the marking guideline discussions.	Building Drawing N2
	The changes made to the marking guidelines in all sampled subjects had no influence on the cognitive levels of the answers/responses required.	Building Drawing N2 Diesel Trade Theory N2 Engineering Drawing N2 Engineering Science N2 Fitting and Machining Theory N2 Water and Waste-water Treatment Practice N2
Participation in the marking guideline discussions	All those present participated actively in the marking guideline discussions for all subjects included in the sample.	Building Drawing N2 Diesel Trade Theory N2 Engineering Drawing N2 Engineering Science N2 Fitting and Machining Theory N2 Water and Waste-water Treatment Practice N2

Evaluation criteria	Findings and challenges	Sample subjects involved
Role of the external moderator	The external moderator chaired and facilitated the discussion, acted as mediator between the chief marker, internal moderator and the markers and provided guidance and clarified markers' concerns (33% of subjects).	Building Drawing N2 Fitting and Machining Theory N2
	The external moderator observed the process and provided input during the discussions. The external moderator played a supporting role and confirmed the interpretation of mark allocations to the markers (67%).	Diesel Trade Theory N2 Engineering Drawing N2 Engineering Science N2 Water and Waste-water Treatment Practice N2
Sample marking	The markers (all subjects) received live scripts to mark before the marking guideline discussions (sample marking).	Building Drawing N2 Engineering Drawing N2 Engineering Science N2 Fitting and Machining Theory N2 Diesel Trade Theory N2 Water and Waste-water Treatment Practice N2
	The markers received dummy scripts to mark after the marking guideline discussions (sample marking)(67%).	Engineering Science N2 Fitting and Machining Theory N2 Diesel Trade Theory N2 Water and Waste-water Treatment Practice N2
Adherence to the marking guidelines in sample marking	The chief markers/internal moderators (17%) adhered to the marking guidelines during sample marking.	Fitting and Machining Theory N2
	The chief markers/internal moderators (83%) did not adhere to the marking guidelines during sample marking, but discrepancies were identified and discussed.	Building Drawing N2 Diesel Trade Theory N2 Engineering Drawing N2 Engineering Science N2 Water and Waste-water Treatment Practice N2
Rating of the chief marker performance in sample marking	Chief marker performance was rated as average (17%).	Building Drawing N2
	Chief marker performance was rated as good in one subject (17%).	Fitting and Machining Theory N2
	Chief marker performance was rated as excellent in one subject (17%).	Engineering Science N2
	Chief marker performance was not rated in 50% of the subjects.	Diesel Trade Theory N2 Engineering Drawing N2 Water and Waste-water Treatment Practice N2
Rating of internal moderation in sample marking	Standard of internal moderation in sample marking in 33% of the subjects was rated as good.	Building Drawing N2 Fitting and Machining Theory N2
	Standard of internal moderation in sample marking was rated as excellent in two subjects (33%).	Diesel Trade Theory N2 Engineering Science N2

Evaluation criteria	Findings and challenges	Sample subjects involved
Rating of internal moderation in sample marking	Standard of internal moderation in two subjects (33%) was not rated.	Engineering Drawing N2 Water and Waste-water Treatment Practice N2
Measures to address issues of inconsistency and calculation errors	The following corrective measures were reported:	
	Remarking was the corrective procedure in 67% of the subjects during sample marking.	Building Drawing N2 Engineering Drawing N2 Engineering Science N2 Water and Waste-water Treatment Practice N2
	The chief marker and markers discussed and agreed on inconsistencies and no calculation errors were identified in two subjects (33%).	Diesel Trade Theory N2 Fitting and Machining Theory N2
Adjustments to the marking guidelines after sample marking	No adjustments were made to the marking guidelines after sample marking in any of the sampled subjects.	Building Drawing N2 Diesel Trade Theory N2 Engineering Drawing N2 Engineering Science N2 Fitting and Machining Theory N2 Water and Waste-water Treatment Practice N2
Signing off of marking guidelines	The listed marking guidelines were signed off by the external moderators.	Building Drawing N2 Diesel Trade Theory N2 Engineering Drawing N2 Engineering Science N2 Fitting and Machining Theory N2
Measures regarding translated marking guidelines	The following issues concerning translated marking guidelines were reported:	
	Seventeen percent of the subjects did not require translated marking guidelines.	Building Drawing N2
	No translated (Afrikaans version of) marking guidelines were received for one subject (17%).	Diesel Trade Theory N2
	Translated marking guidelines (Afrikaans version) were received for (50%) of the subjects.	Engineering Science N2 Fitting and Machining Theory N2 Water and Waste-water Treatment Practice N2
	The Afrikaans version of marking guidelines originally contained errors, which were addressed by the external moderator (17%).	Engineering Drawing N2
Complaints regarding ambiguous questions beyond the syllabus or above the level	No complaints about questions were received for 83% of the subjects.	Building Drawing N2 Diesel Trade Theory N2 Engineering Drawing N2 Fitting and Machining Theory N2 Water and Waste-water Treatment Practice N2

Evaluation criteria	Findings and challenges	Sample subjects involved
Minutes of the marking guideline discussions	The minutes of the marking guideline discussions for all subjects were submitted to the marking centre manager.	Building Drawing N2 Diesel Trade Theory N2 Engineering Drawing N2 Engineering Science N2 Fitting and Machining Theory N2 Water and Waste-water Treatment Practice N2
Adjusted marking guidelines	All adjusted marking guidelines (100%) were submitted to the marking centre manager.	Building Drawing N2 Diesel Trade Theory N2 Engineering Drawing N2 Engineering Science N2 Fitting and Machining Theory N2 Water and Waste-water Treatment Practice N2
Overall behaviour of chief markers, markers and internal moderators	There were problems with the general conduct of participants, e.g. individual participants who attempted to dominate the marking process in two subjects (33%).	Building Drawing N2 Engineering Drawing N2
	There were no problems with the general conduct or participants in 67% of the subjects.	Diesel Trade Theory N2 Engineering Science N2 Fitting and Machining Theory N2 Water and Waste-water Treatment Practice N2

Table 7E: Findings of marking guideline discussions for NATED N3 subjects

Evaluation criteria	Findings and challenges	Sample subjects involved
Attendance/ absenteeism of participants	The chief markers and internal moderators attended the marking guideline discussions in 90% of the subjects.	Building Science N3 Business English First Language N3 Paper 1, 2 Electro-technology N3 Engineering Science N3 Mathematics N3 Plating and Structural Steel Drawing N3 Supervision in Industry N3 Water Treatment Practice N3
	One of the two appointed chief markers was absent from the marking guideline discussion meetings.	Industrial Electronics N3
	All participants were on time for the marking guideline discussion meetings in 30% of the subjects.	Building Science N3 Business English N3 First Language Paper 1, 2
	Fifty percent of the participants were punctual.	Industrial Electronics N3 Mathematics N3 Plating and Structural Steel Drawing N3 Supervision in Industry N3 Water Treatment Practice N3

Evaluation criteria	Findings and challenges	Sample subjects involved
Attendance/ absenteeism of participants	The participants (i.e. chief markers, internal moderators and markers) for 20% of the subjects attended the marking guideline discussion meetings.	Electro-technology N3 Engineering Science N3
Training	In 70% of the subjects, all the participants present attended the general training.	Building Science N3 Electrotechnology N3 Engineering Science N3 Industrial Electronics N3 Mathematics N3 Plating and Structural Steel Drawing N3 Supervision in Industry N3
	In one subject (10%) only the chief marker attended the training.	Water Treatment Practice N3
Appointment of marking staff	Seventy percent of the internal moderators, chief markers and markers received their appointment letters before the marking guideline discussion meetings.	Building Science N3 Electro-technology N3 Engineering Science N3 Mathematics N3 Plating and Structural Steel Drawing N3 Supervision in Industry N3 Water Treatment Practice N3
	The internal moderator, chief marker and markers did not receive their appointment letters before the marking guideline discussion meetings (30% of the subjects).	Business English First Language N3 Paper 1, 2 Industrial Electronics N3
External moderation changes	All the external moderation recommendations and/or changes to the question paper and marking guidelines were applied in all the sampled subjects.	Building Science N3 Business English First Language N3 Paper 1, 2 Electro-technology N3 Engineering Science N3 Industrial Electronics N3 Mathematics N3 Plating and Structural Steel Drawing N3 Supervision in Industry N3 Water Treatment Practice N3
Marking of sampled scripts	The chief marker or the internal moderator marked a sample of examination scripts before the marking guideline discussions (10% of subjects).	Business English First Language N3 Paper 1
	The chief marker or the internal moderator did not mark a sample of examination scripts before the marking guideline discussions (90% of the subjects.)	Building Science N3 Business English First Language N3 Paper 2 Electro-technology N3 Engineering Science N3 Industrial Electronics N3 Mathematics N3 Plating and Structural Steel Drawing N3 Supervision in Industry N3 Water Treatment Practice N3

Evaluation criteria	Findings and challenges	Sample subjects involved
Adjustments to the marking guidelines before the marking guideline discussions	The internal moderator or the chief marker made adjustments to the marking guidelines before the marking guideline discussions (30% of the subjects).	Business English First Language N3 Paper 1 Plating and Structural Steel Drawing N3 Supervision in Industry N3
	In 70% of the subjects, the internal moderator or the chief marker did not make any adjustments to the marking guidelines before the marking guideline discussions.	Building Science N3 Business English First Language N3 Paper 2 Electro-technology N3 Engineering Science N3 Industrial Electronics N3 Mathematics N3 Water Treatment Practice N3
Preparedness of appointed participants	In 50% of the subjects the internal moderator, chief marker and the appointed markers came prepared to the marking guideline discussion meetings.	Building Science N3 Electro-technology N3 Engineering Science N3 Plating and Structural Steel Drawing N3 Supervision in Industry N3
	In 50% of the subjects the internal moderator, chief marker and the appointed markers did not come prepared to the marking guideline discussion meetings, e.g. they had not prepared their own marking guidelines.	Business English First Language N3 Paper 1, 2 Industrial Electronics N3 Mathematics N3 Water Treatment Practice N3
Adjustments to the marking guidelines during the marking guideline discussions	Adjustments were made to all the marking guidelines during the marking guideline discussion meetings and the adjustments were justified.	Building Science N3 Business English First Language N3 Paper 1, 2 Electro-technology N3 Engineering Science N3 Industrial Electronics N3 Mathematics N3 Plating and Structural Steel Drawing N3 Supervision in Industry N3 Water Treatment Practice N3
Influence of adjustments to the marking guidelines on the cognitive level of the answers/ responses required	The changes/adjustments were minor or affected the mark allocation only – not the cognitive levels of answers for all the subjects.	Building Science N3 Business English First Language N3 Paper 1, 2 Electro-technology N3 Engineering Science N3 Industrial Electronics N3 Mathematics N3 Plating and Structural Steel Drawing N3 Supervision in Industry N3 Water Treatment Practice N3

Evaluation criteria	Findings and challenges	Sample subjects involved
Role of the external moderator	None of the external moderators led the marking guideline discussions, but they did offer guidance, support and assistance during the discussions.	Building Science N3 Business English First Language N3 Paper 1, 2 Engineering Science N3 Electro-technology N3 Industrial Electronics N3 Mathematics N3 Supervision in Industry N3 Plating and Structural Steel Drawing N3 Water Treatment Practice N3
Sample marking	All the markers received scripts for sample marking after the marking guideline discussions.	Building Science N3 Business English First Language N3 Paper 1, 2 Industrial Electronics N3 Electro-technology N3 Engineering Science N3 Mathematics N3 Plating and Structural Steel Drawing N3 Supervision in Industry N3 Water Treatment Practice N3
	Markers for 80% of the subjects marked a copy of the same script to determine consistency of marking.	Building Science N3 Electro-technology N3 Engineering Science N3 Industrial Electronics N3 Mathematics N3 Plating and Structural Steel Drawing N3 Supervision in Industry N3 Water Treatment Practice N3
	Markers for 20% of the subjects did not mark a sample copy of the same script to determine consistency of marking.	Business English First Language N3 Paper 1, 2
Guidance/ training provided to markers during sample marking	The following guidance/training was reported:	
	• Interaction between the chief marker and the internal moderator on a continuous basis.	Building Science N3
	• Continuous assistance of markers, answering markers' questions, checking/ evaluating marked examination scripts and providing feedback to the markers.	Business English First Language N3 Paper 1, 2 Electro-technology N3 Supervision in Industry N3
	• The chief marker explored the sample marking, section by section, addressing queries and discrepancies in marks.	Industrial Electronics N3
	• The markers formed groups during sample marking and each marker marked only the questions assigned to the group.	Mathematics N3

Evaluation criteria	Findings and challenges	Sample subjects involved
Guidance/ training provided to markers during sample marking	• The markers worked together to address the challenges involved in mark allocation and the chief marker cautioned the markers as to questions that might be prone to errors.	Plating and Structural Steel Drawing N3
	• Whole script approach was adopted, as there was only two markers.	Water Treatment Practice N3
	• No guidance to markers	Engineering Science N3
Adherence to the marking guidelines in sample marking	The markers adhered to the marking guidelines during sample marking.	Building Science N3 Business English First Language N3 Paper 2 Electro-technology N3 Engineering Science N3 Plating and Structural Steel Drawing N3 Supervision in Industry N3 Water Treatment Practice N3
	The markers deducted ½ a mark for formatting errors instead of 1 mark, which was pointed out and corrected.	Business English First Language N3 Paper 1
	Markers' judgement was reported as poor and they did not adhere to the marking guidelines.	Mathematics N3
Rating of marker performance in sample marking	Marker performance was rated as poor in one subject (10%).	Mathematics N3
	Marker performance rated as average in one subject (10%).	Supervision in Industry N3
	Marker performance rated as good for six subjects (60%).	Building Science N3 Business English First Language N3 Paper 1, 2 Electro-technology N3 Engineering Science N3 Water Treatment Practice N3
	Marker performance rated as excellent in one subject (10%).	Plating and Structural Steel Drawing N3
	Marker performance not rated (10%).	Industrial Electronics N3
Rating of internal moderation in sample marking	Standard of internal moderation of sample marking was rated as poor in one subject (10%).	Mathematics N3
	Standard of internal moderation of sample marking was rated as average in one subject (10%).	Water Treatment Practice N3
	Standard of internal moderation of sample marking was rated as good in 40% of the subjects.	Building Science N3 Electro-technology N3 Engineering Science N3 Supervision in Industry N3
	Standard of internal moderation of sample marking was rated as excellent in 30% of the subjects.	Business English First Language N3 Paper 1, 2 Plating and Structural Steel Drawing N3

Evaluation criteria	Findings and challenges	Sample subjects involved
Rating of internal moderation in sample marking	Standard of internal moderation of one subject (10%) was not rated as no moderation took place.	Industrial Electronics N3
Measures to address issues of inconsistency and calculation errors	The following measures were reported:	
	After the moderation, the chief marker standardised the sample marking by discussing the mark allocation of each question. Differences and queries were also discussed and markers debated the differences in mark allocation.	Building Science N3 Mathematics N3 Plating and Structural Steel Drawing N3 Supervision in Industry N3
	Differences of more than 5% in the mark allocation of the two markers involved resulted in a remarking exercise.	Water Treatment Practice N3
	No measures: no changes were made during sample marking.	Business English First Language N3 Paper 1, 2 Electro-technology N3 Engineering Science N3
Adjustments to the marking guidelines after sample marking	Adjustments were made to 10% of the marking guidelines after sample marking.	Building Science N3
	No adjustments were made to 90% of the marking guidelines after sample marking.	Business English First Language N3 Paper 1, 2 Electro-technology N3 Engineering Science N3 Industrial Electronics N3 Mathematics N3 Plating and Structural Steel Drawing N3 Supervision in Industry N3 Water Treatment Practice N3
General conduct of participants in the marking guideline discussions	No problems were experienced or reported in terms of the general conduct of markers, chief markers and internal moderators in 80% of the subjects.	Building Science N3 Business English First Language N3 Paper 1, 2 Electro-technology N3 Engineering Science N3 Mathematics N3 Plating and Structural Steel Drawing N3 Supervision in Industry N3
	The following problems were reported: markers arriving late, with only two offering apologies, and markers not having prepared marking guidelines (10% of subjects).	Industrial Electronics N3
	The internal moderator for one subject (10%) was not well prepared and the marking guidelines were incomplete and contained errors.	Water Treatment Practice N3
Signing off the marking guidelines	All the external moderators signed off the marking guidelines.	Building Science N3 Business English First Language N3 Paper 1, 2 Electro-technology N3 Engineering Science N3 Industrial Electronics N3

Evaluation criteria	Findings and challenges	Sample subjects involved
Signing off the marking guidelines		Mathematics N3 Plating and Structural Steel Drawing N3 Water Treatment Practice N3 Supervision in Industry N3
Measures regarding translated marking guidelines	The following measures regarding the translated marking guidelines were reported:	
	The marking centre manager provided an expert to control the scripts marked using the Afrikaans version of the marking guidelines (12% of subjects).	Building Science N3
	No Afrikaans versions of the marking guidelines were available for 88% of the subjects.	Electro-technology N3 Engineering Science N3 Industrial Electronics N3 Mathematics N3 Plating and Structural Steel Drawing N3 Supervision in Industry N3 Water Treatment Practice N3
Complaints regarding ambiguous questions, beyond the scope of the syllabus or above the level	No complaints about questions were received.	Building Science N3 Business English First Language N3 Paper 1 Electro-technology N3 Engineering Science N3 Industrial Electronics N3 Water Treatment Practice N3
	Single questions were reported as being ambiguous.	Business English First Language N3 Paper 2 Mathematics N3 Supervision in Industry N3
Minutes of the marking guideline discussions	Minutes of the marking guideline discussion meetings were submitted to the marking centre manager (100%).	Building Science N3 Business English First Language N3 Paper 1, 2 Electro-technology N3 Engineering Science N3 Industrial Electronics N3 Mathematics N3 Plating and Structural Steel Drawing N3 Supervision in Industry N3 Water Treatment Practice N3
Adjusted marking guidelines	All the adjusted marking guidelines (100%) were submitted to the marking centre manager.	Building Science N3 Business English First Language N3 Paper 1, 2 Electro-technology N3 Engineering Science N3 Industrial Electronics N3 Mathematics N3 Plating and Structural Steel Drawing N3 Supervision in Industry N3 Water Treatment Practice N3

7.4 Areas of Good Practice

Although there were single or small numbers of exceptions, it was possible to identify the following areas of good practice:

- With the exception of one N3 subject (10%), all the chief markers and internal moderators attended the marking guideline discussion meeting.
- All the adjustments made to the marking guidelines in all N3 subjects were justified. In five N2 subjects (83%), all the adjustments made to the marking guidelines were justified and had no effect on the cognitive levels of the answers/responses expected from the students.
- All the markers of N3 subjects (100%) and four markers of N2 subjects (67%) received examination scripts for sample marking after the marking guideline discussion meetings.
- With the exception of a single subject (Engineering Science N3) the N3 subjects (90%) included in the sample showed evidence of guidance and/or training having been provided to the markers during the sample marking process. With the exception of one subject (Mathematics N3, in which marker judgement and adherence to marking guidelines were reported as poor), the markers adhered to the marking guidelines during the sample marking process. Four N2 chief markers/internal moderators (67%) did not adhere to the marking guidelines during sample marking, but discrepancies were identified and discussed. Based on this information, it was possible to conclude that the sample marking process had been successfully conducted.
- All those attending meetings in all N2 subjects (100%) participated actively in the marking guideline discussions and in four N2 subjects (67%), no problems in the general conduct of participants were encountered. In eight N3 subjects (80%) no problems were experienced or reported in the general conduct of markers, chief markers or internal moderators.
- With the exception of two N3 subjects (20%), the internal moderation of sample marking was rated as either good or excellent.
- Adjusted marking guidelines for all N3 and N2 subjects (100%) were submitted to the marking centre manager.

7.5 Areas of Concern

Based on external moderators' findings, the following areas of concern were identified in the marking guideline discussions:

- There were only three N3 subjects in which all the participants present attended the DHET/marking centre manager training sessions. In one N3 subject, only the chief marker attended this training. In four N3 subjects, the training started too late and in the case of three N3 subjects, the participants claimed they were unaware of the training.
- In three N3 subjects (30%), the internal moderator, chief marker and markers did not receive their appointment letters before the marking guideline discussion meetings.
- In five N3 subjects (50%) the internal moderator, chief marker and appointed markers did not come prepared to the marking guideline discussion meetings, that is, with their own

prepared marking guidelines. There were three N2 subjects (50%) in which the appointed markers did not come prepared to the marking guideline discussion.

7.6 Directives for Compliance and Improvement

- All participants in the marking guideline discussions must attend both the DHET/marking centre manager training sessions and the training at the marking guideline discussion meetings.
- The DHET must ensure that accurate information concerning subjects to be marked at a specific marking centre are communicated to the marking centres and that the appointment processes are completed before the onset of the marking.
- It is crucially important to ensure that all internal moderators, chief markers and markers are well prepared for the marking guideline discussion meetings – particularly given the fact that it is an essential component of their appointments.
- The sample marking process makes a significant contribution to the moderation and quality assurance exercise. Therefore, it is important to ensure that the chief markers and internal moderators pay close attention to this part of the process and mark a sample of examination scripts before the marking guideline discussion meetings.

7.7 Conclusion

The marking guideline discussions for the November 2016 NATED Report 191/190 examinations has been successfully accomplished. The improvement in the operational and logistical aspects related to the marking guideline discussion process must be acknowledged.

CHAPTER 8: VERIFICATION OF MARKING

8.1 Introduction and Purpose

The moderation of marking is a vitally important process, in that it verifies the standard and quality of marking. The purpose of Umalusi's marking verification process is to:

- Ensure the consistency and accuracy of marking;
- Ensure that marking has been done in accordance with the marking guidelines; and
- Establish whether both the marking exercise and the internal moderation process have been performed according to agreed and established practices and standards.

The majority of N3 subjects were marked centrally at the Pretoria West Campus of Tshwane South TVET College. Some N2 and N3 subjects were marked at a specific marking centre that proved to have the necessary expertise. The majority of N2 subjects were marked at marking centres in all nine provinces. Subjects with low enrolments were, however, redirected to a limited number of provinces or to only one marking centre for marking.

The purpose of this section is to report on:

- The consistency of marking and internal moderation;
- The performance of candidates in specific examination papers;
- The identification of good practices and areas of concern; and
- Recommendations for improvement based on the findings.

8.2 Scope and Approach

Umalusi deployed moderators to verify the marking of seven N2 subjects at provincial marking centres in three provinces and to verify the marking of 17 N3 subjects at Pretoria West, three in Centurion, one in Springs and one in Iqhayiya.

See Tables 8A and 8B for subjects that were included in the verification of marking sample, the dates and the sites at which the process was conducted.

Table 8A: N2 Verification of marking

No.	Subject	Date	Marking Centre
1	Building Drawing	05/12/16	Centurion
2	Engineering Drawing	08/12/16	Seshego
3	Engineering Science	08/12/16	Seshego
4	Industrial Electronics	08/12/16	Mpondozankomo
5	Mathematics	07/12/16	Seshego
6	Platers' Theory	05 /12/16	Centurion
7	Welder's Theory N2	06/12/16	Centurion

Table 8B: N3 Verification of marking

No.	Subject	Date	Marking Centre
1	Building and Civil Technology	07/12/16	Pretoria West
2	Building Science	07/12/16	
3	Business English First Language	05/12/16	Springs
4	Business English Second Language	05/12/16	
5	Diesel Trade Theory	06/12/16	Pretoria West
6	Electrical Trade Theory	05/12/16	
7	Electro-technology	05/12/16	
8	Engineering Drawing	09/12/16	
9	Engineering Science	04/12/16	
10	Industrial Electronics	09/12/16	
11	Industrial Organisation and Planning	05/12/16	Centurion
12	Industrial Orientation	07/12/16	
13	Instrument Trade Theory	07/12/16	Pretoria West
14	Logic Systems	06/12/16	
15	Mathematics	04/12/16	
16	Mechanotechnology	06/12/16	
17	Motor Trade Theory	08/12/16	Ighayiya
18	Plant Operation Theory	07/12/16	Pretoria West
19	Plating and Structural Steel Drawing	06/12/16	
20	Radio and Television Theory	05/12/16	
21	Supervision in Industry	06/12/16	
22	Waste-water Treatment Practice	07/12/16	Pretoria West

Table 8C provides information on the N2 and N3 subjects, the number of provinces and the number of sites included in Umalusi's on-site verification of marking.

Table 8C: Verification of marking NATED Report 190/191: Engineering Studies N2 and N3

Subjects	Number of provinces	Number of centres sampled within each province									
		Western Cape	Northern Cape	Free State	Eastern Cape	KwaZulu-Natal	Mpumalanga	Limpopo	Gauteng	North West	10*
Building and Civil Technology N3	8	2	-	2	2	4	2	2	4	2	-
Building Drawing N2	1	-	-	-	-	-	-	-	12	-	-
Building Science N3	8	1	-	-	3	1	1	2	5	2	1
Business English First and Second Language N3	3	-	-	2	-	-	1	-	5	-	-
Diesel Trade Theory N3	8	2	1	1	-	1	10	2	1	2	-

Subjects	Number of provinces	Number of centres sampled within each province									
		Western Cape	Northern Cape	Free State	Eastern Cape	KwaZulu-Natal	Mpumalanga	Limpopo	Gauteng	North West	10*
Electrical Trade Theory N3	8	1	-	1	1	1	1	5	5	1	-
Electro-technology N3	5	-	-	-	-	2	2	3	6	2	-
Engineering Drawing N3	10	2	2	3	2	2	2	2	2	2	1
Engineering Drawing N2	2	-	-	-	-	-	1	8	-	-	-
Engineering Science N3	6	-	-	-	-	4	1	2	3	4	1
Engineering Science N2	1	-	-	-	-	-	-	22	-	-	-
Industrial Electronics N3	6	-	-	-	-	2	2	7	6	1	2
Industrial Electronics N2	1	-	-	-	-	-	18	-	-	-	-
Industrial Organisation and Planning N3	6	-	-	3	-	1	2	2	3	3	-
Industrial Orientation N3	4	-	-	1	-	2	1	-	6	-	-
Instrument Trade Theory N3	7	-	1	2	-	2	1	1	1	3	-
Logic Systems N3	6	3	1	-	1	1	-	2	1	-	-
Mathematics N3	4	-	-	-	-	1	-	-	11	5	1
Mathematics N2	1	-	-	-	-	-	-	-	6	-	-
Mechanotechnology N3	10	2	2	2	2	2	3	2	2	2	1
Motor Trade Theory N3	5	-	-	2	11	-	1	2	1	-	-
Plant Operation Theory N3	9	1	-	2	1	2	2	2	2	1	1
Platers' Theory N2	2	-	-	-	-	-	-	4	9	-	-
Plating and Structural Steel Drawing N3	4	-	-	1	-	-	-	1	15	1	-
Radio and Television Theory N3	3	2	-	-	-	-	-	3	5	-	-
Supervision in Industry N3	6	-	2	2	-	-	4	2	3	1	-
Waste-water Treatment Practice N3	7	-	-	1	1	1	1	1	1	1	-
Water Treatment Practice N3	6	2	-	-	2	2	2	2	2	-	-
Welder's Theory N2	4	-	-	-	2	5	-	-	5	2	-

* examination centres outside the borders of South Africa

The N2 and N3 marking exercise for November 2016 was evaluated according to the evaluation criteria and quality indicators set out in Table 8D.

Table 8D: N3 Verification of marking

Evaluation Criteria	Indicators
Marking guidelines discussion	Changes made to the marking guidelines at the marking guidelines discussion at the marking centre.
	Additions made to the marking guidelines during the marking process, e.g. further possible correct answers identified after the onset of marking.
	The communication process used to ensure consistent marking across marking centres, if further changes were made to the marking guidelines.
Marking	All anticipated examination scripts received for marking at this centre
	Examination centres that had outstanding examination scripts.
	Training for marking conducted.
	Marking approach followed:
	Whole examination script marked by one marker.
	Question-wise marking: each marker marked specific questions.
	Adherence to the marking guidelines: good, average, poor.
	Standard of marking: good, average or poor.
	Marking administration: Prescribed procedure for the allocation of marks followed. Marks indicated per question. Mistakes clearly indicated. Marks correctly transferred to the cover page of the examination script and to the mark sheet. Mark sheets completed correctly. Notes kept throughout the marking period to facilitate report writing.
	Marking control: Attached name list that indicates who was responsible for the marking of each question. Marker indicated his/her code/name in red ink next to the question marked on the cover page of the examination script. Name of the internal moderator clearly indicated on the examination scripts.
Internal moderation	Evidence of internal moderation of the examination scripts throughout the marking process.
	Criteria used for the sampling of examination scripts.
	Scripts of all the examination centres internally moderated.
	Internal moderation process: whole script moderation or only certain questions moderated.
	Standard of internal moderation: good, average or poor
	Number/percentage of scripts moderated.
Response to the examination question paper	Candidates' performance in line with predictions.
	Candidates found question paper: fair, difficult or easy.
	Evidence of the performance of candidates.
Prevention and handling of irregularities	Evidence and reporting of irregularities.
	Examination scripts stamped at the examination centres.
	Absentee forms and attendance registers used.

Evaluation Criteria	Indicators
Reports	Chief markers, markers and internal moderators prepared/contributed to qualitative reports.
	Quality assurance of the reports.
	Submission and use of reports.

8.3 Summary of Findings

Tables 8E and 8F present the findings regarding the verification of marking, as captured in the external moderator reports.

Table 8E: Findings from the verification of marking of NATED N2 subjects

Evaluation criteria	Findings and challenges	Sample subjects involved
Marking guideline discussion	Changes were made to the marking guidelines of 57% of the subjects at the marking guideline discussion meetings at the marking centre.	Engineering Science N2 Industrial Electronics N2 Platers' Theory N2 Welder's Theory N2
	No changes were made to the marking guidelines of 43% of the subjects at the marking guideline discussion meetings at the marking centre.	Building Drawing N2 Engineering Drawing N2 Mathematics N2
	Additions were made to the marking guidelines of 14% of the subjects during the marking process.	Platers' Theory N2
	No additions were made to the marking guidelines of 86% of the subjects during the marking process.	Building Drawing N2 Engineering Drawing N2 Engineering Science N2 Industrial Electronics N2 Mathematics N2 Welder's Theory N2
Marking	Fifty-seven percent of the subjects' anticipated examination scripts had been received by the time external moderation took place.	Engineering Drawing N2 Industrial Electronics N2 Platers' Theory N2 Welder's Theory N2
	Forty-three percent of the subjects' anticipated examination scripts had not been received by the time of external moderation.	Building Drawing N2 Engineering Science N2 Mathematics N2
	It was evident that marking training was conducted in 86% of the subjects.	Building Drawing N2 Engineering Science N2 Industrial Electronics N2 Mathematics N2 Platers' Theory N2 Welder's Theory N2
	Marking training could not be verified in 14% of the subjects.	Engineering Drawing N2
	Whole script marking was used in 14% of the subjects.	Welder's Theory N2

Evaluation criteria	Findings and challenges	Sample subjects involved
Marking	Per question marking was the approach followed in 72% of the subjects.	Building Drawing N2 Engineering Drawing N2 Engineering Science N2 Industrial Electronics N2 Mathematics N2
	Both whole script and per question marking was used in one subject (14%).	Platers' Theory N2
	Adherence to marking guidelines was rated as poor in 28% of the subjects.	Mathematics N2 Welder's Theory N2
	Adherence to marking guidelines was rated as average in 28% of the subjects.	Building Drawing N2 Engineering Drawing N2
	Adherence to marking guidelines was rated as good in 44% of the subjects.	Engineering Science N2 Industrial Electronics N2 Platers' Theory N2
	Standard of marking was rated as poor in 28% of the subjects.	Mathematics N2 Welder's Theory N2
	Standard of marking was rated as average in 44% of the subjects.	Building Drawing N2 Engineering Drawing N2 Industrial Electronics N2
	Standard of marking was rated as good in 28% of the subjects.	Engineering Science N2 Platers' Theory N2
	Eighty-six percent of the subjects followed the prescribed administrative procedure for mark allocation.	Engineering Drawing N2 Engineering Science N2 Industrial Electronics N2 Mathematics N2 Platers' Theory N2 Welder's Theory N2
	Fourteen percent of the subjects did not follow the administrative procedure for mark allocation.	Building Drawing N2
	In all the subjects, marks were indicated per question.	Building Drawing N2 Engineering Drawing N2 Engineering Science N2 Industrial Electronics N2 Mathematics N2 Platers' Theory N2 Welder's Theory N2
	Mistakes were clearly indicated in 86% of the subjects.	Building Drawing N2 Engineering Science N2 Industrial Electronics N2 Mathematics N2 Platers' Theory N2 Welder's Theory N2
	Mistakes were not clearly indicated in 14% of the subjects.	Engineering Drawing N2

Evaluation criteria	Findings and challenges	Sample subjects involved
Marking	In all subjects, marks were transferred correctly to the cover page and mark sheet.	Building Drawing N2 Engineering Drawing N2 Engineering Science N2 Industrial Electronics N2 Mathematics N2 Platers' Theory N2 Welder's Theory N2
	Mark sheets were completed correctly in 86% of the subjects.	Engineering Drawing N2 Engineering Science N2 Industrial Electronics N2 Mathematics N2 Platers' Theory N2 Welder's Theory N2
	Mark sheets were not completed correctly in 14% of the subjects.	Building Drawing N2
	In 29% of subjects, notes were kept throughout the marking period.	Engineering Science N2 Platers' Theory N2
	No notes were kept throughout the marking period in 71% of the subjects.	Building Drawing N2 Engineering Drawing N2 Industrial Electronics N2 Mathematics N2 Welder's Theory N2
	The code/name of the marker was indicated in red ink on the cover page next to the question marked in 71% of the subjects.	Engineering Drawing N2 Engineering Science N2 Industrial Electronics N2 Mathematics N2 Platers' Theory N2
	Markers did not indicate their codes/names on the cover page in 29% of the subjects.	Building Drawing N2 Welder's Theory N2
	The name of the internal moderator was clearly indicated on 57% of examination scripts.	Engineering Drawing N2 Engineering Science N2 Industrial Electronics N2 Platers' Theory N2
	The name of the internal moderator was not clearly indicated on 43% of the examination scripts.	Building Drawing N2 Mathematics N2 Welder's Theory N2
Internal moderation	There was evidence of moderation in 86% of the examination scripts throughout the marking process.	Building Drawing N2 Engineering Drawing N2 Engineering Science N2 Industrial Electronics N2 Mathematics N2 Platers' Theory N2
	There was no evidence of moderation in 14% of the examination scripts throughout the marking process.	Welder's Theory N2

Evaluation criteria	Findings and challenges	Sample subjects involved
Internal moderation	In 44% of the subjects, a sample of examination scripts from all the examination centres were moderated.	Engineering Science N2 Mathematics N2 Platers' Theory N2
	In 44% of the subjects, not all the examination centres were included in the moderation process.	Building Drawing N2 Engineering Drawing N2 Industrial Electronics N2
	The internal moderator moderated all the questions in a script (whole script moderation) in 86% of the subjects.	Building Drawing N2 Engineering Drawing N2 Engineering Science N2 Industrial Electronics N2 Mathematics N2 Platers' Theory N2
	Standard of internal moderation was rated as poor in 14% of the subjects.	Mathematics N2
	Standard of internal moderation was rated as average in 29% of the subjects.	Engineering Drawing N2 Industrial Electronics N2
	Standard of internal moderation was rated as good in 44% of the subjects.	Building Drawing N2 Engineering Science N2 Platers' Theory N2
Response to the examination question paper	The candidates' performance was in line with predictions in 86% of the subjects.	Building Drawing N2 Engineering Drawing N2 Engineering Science N2 Industrial Electronics N2 Platers' Theory N2 Welder's Theory N2
	The candidates' performance was not in line with expectations in 14% of the subjects.	Mathematics N2
	Candidates in 86% of subjects found the question paper fair.	Building Drawing N2 Engineering Drawing N2 Engineering Science N2 Industrial Electronics N2 Platers' Theory N2 Welder's Theory N2
	Candidates in 14% of subjects found the question paper difficult.	Mathematics N2
Prevention and handling of irregularities	Irregularities – mostly administrative or technical in nature – were reported to the marking centre manager and handled according to examination guidelines (44% subjects).	Engineering Science N2 Industrial Electronics N2 Mathematics N2
	No irregularities had been identified or reported in 57% of the subjects by the time of external moderation.	Building Drawing N2 Engineering Drawing N2 Platers' Theory N2 Welder's Theory N2
Chief markers and Internal moderation of marking reports	Markers, chief markers and internal moderators compiled notes, which assisted with the preparation of the chief marker and internal moderators' reports in 14% of the subjects.	Engineering Science N2

Evaluation criteria	Findings and challenges	Sample subjects involved
Chief markers and Internal moderation of marking reports	In 14% of the subjects, no notes were kept throughout the marking/moderation process and no qualitative report was submitted. Both the chief marker and the internal moderator indicated that they were unaware of these reports.	Platers' Theory N2
Performance of markers, chief markers and internal moderators	Performance varied from average to good in 57% of the subjects.	Engineering Drawing N2 Engineering Science N2 Industrial Electronics N2 Platers' Theory N2
	Poor performance by the chief marker and marker were identified in 14% of the subjects.	Building Drawing N2
	One marker in 14% of the subjects was identified for poor performance.	Welder's Theory N2
	Although the external moderator assessed the quality of both the marking and the internal moderation as poor, no poor markers were identified or recorded (14%).	Mathematics N2
Conduct at the marking centre	Eighty-six percent of the markers were disciplined, professional, punctual, committed and quiet. Cell phones were switched off and the attendance register was signed.	Engineering Drawing N2 Engineering Science N2 Industrial Electronics N2 Mathematics N2 Platers' Theory N2 Welder's Theory N2

Table 8.F: Findings from the verification of marking of NATED N3 subjects

Evaluation criteria	Findings and challenges	Sample subjects involved
Marking guideline discussion	Changes were made to 78% of the marking guidelines at the marking guideline discussion held at the marking centre.	Building and Civil Technology N3 Building Science N3 Business English First Language N3 Paper 1, 2 Diesel Trade Theory N3 Electrical Trade Theory N3 Electro-technology N3 Engineering Drawing N3 Industrial Electronics N3 Instrument Trade Theory N3 Logic Systems N3 Mathematics N3 Mechanotechnology N3 Motor Trade Theory N3 Plant Operation Theory N3 Plating and Structural Steel Drawing N3 Radio and Television Theory N3 Waste-water Treatment Practice N3

Evaluation criteria	Findings and challenges	Sample subjects involved
Marking guideline discussion	No changes were made to 22% of the marking guidelines at the marking guideline discussion held at the marking centre.	Engineering Science N3 Industrial Organisation and Planning N3 Industrial Orientation N3 Supervision in Industry N3 Water Treatment Practice N3
	Additions were made to 8% of the marking guidelines during the marking process.	Plating and Structural Steel Drawing N3 Waste-water Treatment Practice N3
	No additions were made to 92% of the marking guidelines during the marking process.	Building and Civil Technology N3 Building Science N3 Industrial Trade Theory N3 Business English First Language N3 Paper 1, 2 Diesel Trade Theory N3 Electrical Trade Theory N3 Electro-technology N3 Engineering Drawing N3 Engineering Science N3 Industrial Electronics N3 Industrial Organisation and Planning N3 Industrial Orientation N3 Logic Systems N3 Mathematics N3 Mechanotechnology N3 Motor Trade Theory N3 Plant Operation Theory N3 Radio and Television Theory N3 Supervision in Industry N3 Water Treatment Practice N3
Marking	Fifty-two percent of the subjects' anticipated examination scripts had been received by the time of external moderation.	Building and Civil Technology N3 Building Science N3 Diesel Trade Theory N3 Electro-technology N3 Instrument Trade Theory N3 Logic Systems N3 Mathematics N3 Plant Operation Theory N3 Plating and Structural Steel Drawing N3 Radio and Television Theory N3 Waste-water Treatment Practice N3 Water Treatment Practice N3
	Not all expected examination scripts had been received by the time of external moderation in 48% of the subjects.	Business English First Language N3 Paper 1, 2 Electrical Trade Theory N3 Engineering Drawing N3 Engineering Science N3 Industrial Electronics N3 Industrial Orientation N3 Industrial Organisation and Planning N3 Mechanotechnology N3 Motor Trade Theory N3 Supervision in Industry N3

Evaluation criteria	Findings and challenges	Sample subjects involved
Marking	Marking training was done in 82% of the subjects.	Building and Civil Technology N3 Building Science N3 Diesel Trade Theory N3 Electrical Trade Theory N3 Electro-technology N3 Engineering Drawing N3 Engineering Science N3 Industrial Electronics N3 Industrial Organisation and Planning N3 Industrial Orientation N3 Instrument Trade Theory N3 Logic Systems N3 Mathematics N3 Motor Trade Theory N3 Plant Operation Theory N3 Plating and Structural Steel Drawing N3 Radio and Television Theory N3 Supervision in Industry N3 Water Treatment Practice N3
	Training was not conducted in 18% of the subjects.	Business English First Language N3 Paper 1, 2 Mechanotechnology N3 Waste-water Treatment Practice N3
	Thirty-five percent of the subjects used a whole script marking approach.	Instrument Trade Theory N3 Logic Systems N3 Motor Trade Theory N3 Plant Operation Theory N3 Plating and Structural Steel Drawing N3 Radio and Television Theory N3 Waste-water Treatment Practice N3 Water Treatment Practice N3
	The per question approach to marking was followed in 65% of the subjects.	Building and Civil Technology N3 Building Science N3 Business English First Language N3 Paper 1, 2 Diesel Trade Theory N3 Electrical Trade Theory N3 Electro-technology N3 Engineering Drawing N3 Engineering Science N3 Industrial Electronics N3 Industrial Organisation and Planning N3 Industrial Orientation N3 Mathematics N3 Mechanotechnology N3 Supervision in Industry N3
	Adherence to marking guidelines was rated as poor in 4% of the subjects.	Mathematics N3

Evaluation criteria	Findings and challenges	Sample subjects involved
Marking	Adherence to marking guidelines in 92% of the subjects was rated as good.	Building and Civil Technology N3 Building Science N3 Business English First Language N3 Paper 1, 2 Diesel Trade Theory N3 Electrical Trade Theory N3 Electro-technology N3 Engineering Drawing N3 Engineering Science N3 Industrial Electronics N3 Industrial Organisation and Planning N3 Industrial Orientation N3 Logic Systems N3 Mechanotechnology N3 Motor Trade Theory N3 Plant Operation Theory N3 Plating and Structural Steel Drawing N3 Radio and Television Theory N3 Supervision in Industry N3 Waste-water Treatment Practice N3 Water Treatment Practice N3
	Adherence to marking guidelines in 4% of the subjects was rated as average.	Instrument Trade Theory N3
	Standard of marking in 4% of the subjects was rated as poor.	Mathematics N3
	Standard of marking in 8% of the subjects was rated as average.	Industrial Orientation N3 Instrument Trade Theory N3
	Standard of marking in 88% of the subjects was rated as good.	Building and Civil Technology N3 Building Science N3 Business English First Language N3 Paper 1, 2 Diesel Trade Theory N3 Electrical Trade Theory N3 Electro-technology N3 Engineering Drawing N3 Engineering Science N3 Industrial Electronics N3 Industrial Organisation and Planning N3 Logic Systems N3 Mechanotechnology N3 Motor Trade Theory N3 Plant Operation Theory N3 Plating and Structural Steel Drawing N3 Radio and Television Theory N3 Supervision in Industry N3 Waste-water Treatment Practice N3 Water Treatment Practice N3

Evaluation criteria	Findings and challenges	Sample subjects involved
Marking	Ninety-six percent of the subjects followed the prescribed administrative procedure for mark allocation.	Building and Civil Technology N3 Building Science N3 Business English First Language N3 Paper 1, 2 Diesel Trade Theory N3 Electrical Trade Theory N3 Electro-technology N3 Engineering Science N3 Industrial Electronics N3 Industrial Organisation and Planning N3 Industrial Orientation N3 Instrument Trade Theory N3 Logic Systems N3 Mathematics N3 Mechanotechnology N3 Motor Trade Theory N3 Plant Operation Theory N3 Plating and Structural Steel Drawing N3 Radio and Television Theory N3 Supervision in Industry N3 Waste-water Treatment Practice N3 Water Treatment Practice N3
	Four percent of the subjects followed the prescribed administrative procedure for mark allocation.	Engineering Drawing N3
	Marks were indicated per question in 92% of the subjects.	Building and Civil Technology N3 Building Science N3 Diesel Trade Theory N3 Electrical Trade Theory N3 Electro-technology N3 Engineering Drawing N3 Engineering Science N3 Industrial Electronics N3 Industrial Organisation and Planning N3 Industrial Orientation N3 Instrument Trade Theory N3 Logic Systems N3 Mathematics N3 Mechanotechnology N3 Motor Trade Theory N3 Plant Operation Theory N3 Plating and Structural Steel Drawing N3 Radio and Television Theory N3 Supervision in Industry N3 Waste-water Treatment Practice N3 Water Treatment Practice N3
	Marks were not indicated per question in 8% of the subjects.	Business English First Language N3 Paper 1, 2

Evaluation criteria	Findings and challenges	Sample subjects involved
Marking	Mistakes were clearly indicated in 96% of the subjects.	Building and Civil Technology N3 Building Science N3 Business English First Language N3 Paper 1, 2 Diesel Trade Theory N3 Electrical Trade Theory N3 Electro-technology N3 Engineering Science N3 Industrial Organisation and Planning N3 Industrial Orientation N3 Instrument Trade Theory N3 Logic Systems N3 Mathematics N3 Mechanotechnology N3 Motor Trade Theory N3 Plant Operation Theory N3 Plating and Structural Steel Drawing N3 Radio and Television Theory N3 Supervision in Industry N3 Waste-water Treatment Practice N3 Water Treatment Practice N3
	Mistakes were not clearly indicated in 4% of the subjects.	Engineering Drawing N3
	Marks were transferred correctly to the cover page and mark sheet in all subjects.	Building and Civil Technology N3 Building Science N3 Business English First Language N3 Paper 1, 2 Diesel Trade Theory N3 Electrical Trade Theory N3 Electro-technology N3 Engineering Drawing N3 Engineering Science N3 Industrial Electronics N3 Industrial Organisation and Planning N3 Industrial Orientation N3 Instrument Trade Theory N3 Logic Systems N3 Mathematics N3 Mechanotechnology N3 Motor Trade Theory N3 Plant Operation Theory N3 Plating and Structural Steel Drawing N3 Radio and Television Theory N3 Supervision in Industry N3 Waste-water Treatment Practice N3 Water Treatment Practice N3

Evaluation criteria	Findings and challenges	Sample subjects involved
Marking	Mark sheets were completed correctly in 88% of the subjects.	Building and Civil Technology N3 Building Science N3 Business English First Language N3 Paper 1, 2 Diesel Trade Theory N3 Electrical Trade Theory N3 Electro-technology N3 Engineering Drawing N3 Engineering Science N3 Industrial Electronics N3 Industrial Organisation and Planning N3 Industrial Orientation N3 Instrument Trade Theory N3 Logic Systems N3 Mathematics N3 Mechanotechnology N3 Motor Trade Theory N3 Plant Operation Theory N3 Plating and Structural Steel Drawing N3 Radio and Television Theory N3 Supervision in Industry N3
	Mark sheets were not completed correctly. Mark sheets had not been completed at the time of moderation in 8% of the subjects.	Waste-water Treatment Practice N3 Water Treatment Practice N3
	Seventy-four percent of the subjects kept notes throughout the marking period.	Building and Civil Technology N3 Building Science N3 Business English First Language N3 Paper 1, 2 Diesel Trade Theory N3 Engineering Drawing N3 Electrical Trade Theory N3 Electro-technology N3 Industrial Organisation and Planning N3 Industrial Orientation N3 Instrument Trade Theory N3 Logic Systems N3 Motor Trade Theory N3 Plating and Structural Steel Drawing N3 Radio and Television Theory N3 Supervision in Industry N3 Waste-water Treatment Practice N3
	No notes were kept throughout the marking period in 26% of the subjects.	Engineering Science N3 Industrial Electronics N3 Mathematics N3 Mechanotechnology N3 Plant Operation Theory N3 Water Treatment Practice N3

Evaluation criteria	Findings and challenges	Sample subjects involved
Marking	The code/name of the marker was indicated in red ink on the cover page next to the question marked in 87% of the subjects.	Building and Civil Technology N3 Building Science N3 Business English First Language N3 Paper 1, 2 Diesel Trade Theory N3 Electrical Trade Theory N3 Electro-technology N3 Engineering Science N3 Industrial Electronics N3 Industrial Organisation and Planning N3 Industrial Orientation N3 Instrument Trade Theory N3 Logic Systems N3 Mathematics N3 Mechanotechnology N3 Motor Trade Theory N3 Plant Operation Theory N3 Radio and Television Theory N3 Supervision in Industry N3 Waste-water Treatment Practice N3
	Markers did not indicate their codes/names on the cover page in 13% of the subjects.	Engineering Drawing N3 Plating and Structural Steel Drawing N3 Water Treatment Practice N3
	The name of the internal moderator was clearly indicated on the examination scripts in 88% of the subjects.	Building and Civil Technology N3 Building Science N3 Diesel Trade Theory N3 Electrical Trade Theory N3 Electro-technology N3 Engineering Drawing N3 Engineering Science N3 Industrial Electronics N3 Industrial Organisation and Planning N3 Industrial Orientation N3 Instrument Trade Theory N3 Logic Systems N3 Mathematics N3 Mechanotechnology N3 Motor Trade Theory N3 Plant Operation Theory N3 Plating and Structural Steel Drawing N3 Radio and Television Theory N3 Supervision in Industry N3 Waste-water Treatment Practice N3 Water Treatment Practice N3
	The name of the internal moderator was not clearly indicated on the examination scripts in 8% of the subjects.	Business English First Language N3 Paper 1, 2

Evaluation criteria	Findings and challenges	Sample subjects involved
Internal moderation	In 96% of the subjects, there was evidence that the moderation of examination scripts had taken place throughout the marking process.	Building and Civil Technology N3 Building Science N3 Business English First Language N3 Paper 1, 2 Diesel Trade Theory N3 Electrical Trade Theory N3 Electro-technology N3 Engineering Drawing N3 Engineering Science N3 Industrial Electronics N3 Industrial Organisation and Planning N3 Instrument Trade Theory N3 Logic Systems N3 Mathematics N3 Mechanotechnology N3 Motor Trade Theory N3 Plant Operation Theory N3 Plating and Structural Steel Drawing N3 Radio and Television Theory N3 Supervision in Industry N3 Waste-water Treatment Practice N3 Water Treatment Practice N3
	In one subject (4% of the sample), there was no evidence that the moderation of examination scripts had taken place throughout the marking process.	Industrial Orientation N3
	For 70% of subjects, scripts from all examination centres were included in the moderation process.	Building and Civil Technology N3 Building Science N3 Diesel Trade Theory N3 Electrical Trade Theory N3 Electro-technology N3 Engineering Science N3 Industrial Organisation and Planning N3 Instrument Trade Theory N3 Logic Systems N3 Mathematics N3 Mechanotechnology N3 Plant Operation Theory N3 Plating and Structural Steel Drawing N3 Radio and Television Theory N3 Supervision in Industry N3 Waste-water Treatment Practice N3
	For 30% of the subjects, scripts from selected centres were included in the moderation process.	Business English First Language N3 Paper 1, 2 Engineering Drawing N3 Industrial Electronics N3 Industrial Orientation N3 Motor Trade Theory N3 Water Treatment Practice N3

Evaluation criteria	Findings and challenges	Sample subjects involved
Internal moderation	The internal moderator moderated all the answers in a script in 100% of the subjects.	Building and Civil Technology N3 Building Science N3 Business English First Language N3 Paper 1, 2 Diesel Trade Theory N3 Electrical Trade Theory N3 Electro-technology N3 Engineering Drawing N3 Engineering Science N3 Industrial Electronics N3 Industrial Organisation and Planning N3 Industrial Orientation N3 Instrument Trade Theory N3 Logic Systems N3 Mathematics N3 Mechanotechnology N3 Motor Trade Theory N3 Plant Operation Theory N3 Plating and Structural Steel Drawing N3 Radio and Television Theory N3 Supervision in Industry N3 Waste-water Treatment Practice N3 Water Treatment Practice N3
	Standard of internal moderation was rated as poor in 9% of the subjects.	Mathematics N3 Plant Operation Theory N3
	Standard of internal moderation was rated as average in 14% of the subjects.	Industrial Orientation N3 Instrument Trade Theory N3 Water Treatment Practice N3
	Standard of internal moderation was rated as good in 77% of the subjects.	Building and Civil Technology N3 Building Science N3 Business English First Language N3 Paper 1, 2 Diesel Trade Theory N3 Electrical Trade Theory N3 Electro-technology N3 Engineering Drawing N3 Engineering Science N3 Industrial Electronics N3 Industrial Organisation and Planning N3 Plating and Structural Steel Drawing N3 Logic Systems N3 Mechanotechnology N3 Motor Trade Theory N3 Radio and Television Theory N3 Supervision in Industry N3 Waste-water Treatment Practice N3

Evaluation criteria	Findings and challenges	Sample subjects involved
Response to the examination question paper	The candidates' performance in 91% of the subjects was in line with the predictions.	Building and Civil Technology N3 Building Science N3 Diesel Trade Theory N3 Electrical Trade Theory N3 Electro-technology N3 Engineering Drawing N3 Engineering Science N3 Industrial Electronics N3 Industrial Organisation and Planning N3 Industrial Orientation N3 Instrument Trade Theory N3 Logic Systems N3 Mathematics N3 Mechanotechnology N3 Motor Trade Theory N3 Plant Operation Theory N3 Plating and Structural Steel Drawing N3 Radio and Television Theory N3 Supervision in Industry N3 Water Treatment Practice N3
	In 9% of the subjects, candidates' performance was not in line with predictions.	Business English First Language N3 Paper 1, 2 Waste-water Treatment Practice N3
	Candidates found the question paper easy in 4% of the subjects.	Diesel Trade Theory N3
	Candidates found the question paper fair in 79% of the subjects.	Building and Civil Technology N3 Building Science N3 Electrical Trade Theory N3 Electro-technology N3 Engineering Drawing N3 Engineering Science N3 Industrial Electronics N3 Industrial Organisation and Planning N3 Instrument Trade Theory N3 Logic Systems N3 Mathematics N3 Mechanotechnology N3 Motor Trade Theory N3 Plant Operation Theory N3 Plating and Structural Steel Drawing N3 Radio and Television Theory N3 Supervision in Industry N3 Water Treatment Practice N3
	Candidates found the question paper difficult in 17% of the subjects.	Business English First Language N3 Paper 1, 2 Industrial Orientation N3 Waste-water Treatment Practice N3

Evaluation criteria	Findings and challenges	Sample subjects involved
Prevention and handling of irregularities.	Seventy percent of the subjects reported irregularities to the marking centre manager.	Building and Civil Technology N3 Business English First Language N3 Paper 1, 2 Electrical Trade Theory N3 Electro-technology N3 Engineering Drawing N3 Engineering Science N3 Industrial Electronics N3 Industrial Orientation N3 Instrument Trade Theory N3 Mathematics N3 Mechanotechnology N3 Motor Trade Theory N3 Supervision in Industry N3 Waste-water Treatment Practice N3 Water Treatment Practice N3
	No irregularities were identified or reported in 30% of the subjects.	Building Science N3 Diesel Trade Theory N3 Industrial Organisation and Planning N3 Logic Systems N3 Plant Operation Theory N3 Plating and Structural Steel Drawing N3 Radio and Television Theory N3
Reports	In 65% of the subjects markers, chief markers and internal moderators compiled qualitative notes, which assisted in the preparation of the external moderators' reports.	Building and Civil Technology N3 Building Science N3 Electro-technology N3 Engineering Drawing N3 Engineering Science N3 Industrial Organisation and Planning N3 Industrial Orientation N3 Instrument Trade Theory N3 Logic Systems N3 Mathematics N3 Motor Trade Theory N3 Plant Operation Theory N3 Plating and Structural Steel Drawing N3 Radio and Television Theory N3 Supervision in Industry N3
	As no notes were kept throughout the marking/ moderation process, it was not possible to verify the quality of the report in 4% of the subjects.	Industrial Electronics N3
	In 31% of the subjects, the internal moderator and the chief marker kept notes throughout to compile the final report at the end of the marking session.	Business English First Language N3 Paper 1, 2 Diesel Trade Theory N3 Electrical Trade Theory N3 Mechanotechnology N3 Waste-water Treatment Practice N3 Water Treatment Practice N3

Evaluation criteria	Findings and challenges	Sample subjects involved
Performance of markers, chief markers and internal moderators	Although there were incidents of markers arriving late, no poor performers were identified. In 96% of the subjects, participants performed well.	Building and Civil Technology N3 Building Science N3 Business English First Language N3 Paper 1, 2 Diesel Trade Theory N3 Electrical Trade Theory N3 Electro-technology N3 Engineering Drawing N3 Engineering Science N3 Industrial Electronics N3 Industrial Organisation and Planning N3 Industrial Orientation N3 Instrument Trade Theory N3 Logic Systems N3 Mechanotechnology N3 Motor Trade Theory N3 Plant Operation Theory N3 Plating and Structural Steel Drawing N3 Radio and Television Theory N3 Supervision in Industry N3 Waste-water Treatment Practice N3 Water Treatment Practice N3
	Although the external moderator regarded the standard of both the marking and the internal moderation as poor, no poorly performing marker, chief marker or internal moderator was identified in the report.	Mathematics N3
Conduct at the marking centre	In 88% of the subjects, markers were disciplined, professional, punctual, committed and quiet. Cell phones were switched off and the attendance register was signed.	Building and Civil Technology N3 Building Science N3 Business English First Language N3 Paper 1, 2 Electrical Trade Theory N3 Electro-technology N3 Engineering Drawing N3 Engineering Science N3 Industrial Electronics N3 Industrial Organisation and Planning N3 Instrument Trade Theory N3 Logic Systems N3 Mathematics N3 Mechanotechnology N3 Motor Trade Theory N3 Plant Operation Theory N3 Plating and Structural Steel Drawing N3 Radio and Television Theory N3 Supervision in Industry N3 Waste-water Treatment Practice N3

Evaluation criteria	Findings and challenges	Sample subjects involved
Conduct at the marking centre	The chief marker did not exercise control over the team, which was often noisy. This had an effect on the marking process in 4% of the subjects. Cell phones were not switched off at all times.	Diesel Trade Theory N3
	Conduct was not acceptable in 4% of the subjects: markers arrived late and left whenever they liked.	Industrial Orientation N3
	The marking venue was noisy and the chief marker was constantly interrupted in 4% of the subjects.	Water Treatment Practice N3

8.4 Areas of Good Practice

- Of the 29 subjects (30 question papers) for which the marking verification exercise was conducted, only three subjects (10%) made additions to the marking guidelines during the marking process. This suggests that the marking guideline discussions at the examination centres were successful and produced the desired results;
- With the exception of five subjects (17%), in which adherence to the marking guidelines was reported as poor or average, the adherence to marking guidelines was reported as good. It can therefore be concluded that the focussed attention given to the finalisation of the marking guidelines paid off during this assessment opportunity;
- In general, it was reported that markers followed the administrative procedures for mark allocation. Marks were indicated per question, mistakes were clearly indicated, marks were transferred correctly to the cover page and to the mark sheets, and mark sheets were completed correctly. There were nine exceptions (30%) in terms of these criteria, where minor errors or issues were identified; and
- With two exceptions (one N2 subject and one N3 subject), there was evidence of moderation of examination scripts throughout the marking process. Given the success rate of 95% in terms of this criterion, it can be concluded that internal moderators made a great effort to succeed in their moderation task.

8.5 Areas of Concern

- In a total of 14 N2 and N3 question papers (47%) not all expected examination scripts had been received by the time of marking verification;
- Although it was not reported in large numbers, there was a problem with note taking throughout the marking period. In 11 (37%) subjects the markers and/or internal moderators did not take notes during the marking period. These notes are most useful when compiling the qualitative reports and, therefore, it is crucial that markers and moderators take careful notes; and

- In three subjects, external moderators reported on the fact that both the question paper and the syllabus should reflect the latest technology and developments in the subject field, as well as the needs of the particular industry. Although this matter was raised in only three subjects (10%) listed in this report, it was also raised in the report on the moderation of question papers (Chapter 1).

8.6 Directives for Compliance and Improvement

- Markers, chief markers and internal moderators should be reminded of the importance of taking notes during the marking period in order to contribute to and improve the quality of the chief marker and internal moderator reports; and
- Centres where irregularities occurred should be investigated and future examinations should be monitored closely where serious irregularities occurred.

8.7 Conclusion

Based on the evidence provided in the external moderators' reports, it can be concluded that the marking process of the November 2016 NATED Report 190/191: Engineering Studies (N2 and N3) was conducted successfully. Marking centres were well prepared for the marking and moderation process and the centres and processes were administered and managed effectively and efficiently. In general, the markers, chief markers and internal moderators acted responsibly and professionally and produced deliverables to the required standard and according to set procedures and requirements.

Given the fact that the vast majority of question papers were regarded as fair and that the quality of the marking and moderation was reported as acceptable, it is concluded that the assessment process (marking and moderation) can be accepted as valid and reliable.

CHAPTER 9: STANDARDISATION AND RESULTING

9.1 Introduction and Purpose

Standardisation is a statistical process used to mitigate the effects on performance of factors other than learners' ability and knowledge. The standardisation of examination results is necessary to minimise the variation in marks from one examination session to the next. The reasons for this variability may include the standard of question papers and the quality of marking.

Section 17A (4) of the GENFETQA Act of 2001 and amended in 2008 states that the Council may adjust raw marks during the standardisation process.

During the standardisation process, qualitative reports from external moderators, internal moderators, monitoring of marking reports and the principles of standardisation are taken into consideration and inform the decisions.

9.2 Scope and Approach

The Department of Higher Education and Training (DHET) presented a total of 59 instructional offerings for the standardisation of the NATED Report 190/191: Engineering Studies N2 and N3 as well as four N3 Business Languages.

Standardisation involves various procedures to ensure that the standardisation process is carried out accurately. This includes the verification of subject structures, capturing of marks and the computer system of the respective assessment body. It also involves the development and verification of norms, the production of and the verification of standardisation data booklets in preparation for the standardisation meeting.

During the standardisation, qualitative reports from external moderators, internal moderators, monitoring reports as well as the principles of standardisation are taken into consideration to inform decisions. The process is concluded with the approval of mark adjustments (where required) per subject.

Umalusi conducted the verification of the capturing of marks, verified the historical averages and the standardisation and statistical moderation of resulting datasets.

9.2.1 Development of the historical averages

The subject structures submitted by the DHET were verified and approved. For the first time, the historical norm was calculated from the previous six examination sittings.

9.2.2 Capturing of marks

Umalusi conducted the verification of the capturing of marks at the following TVET Colleges: Orbit (Brits Campus), Tshwane South (Pretoria West Campus), Nkangala (Mpondozankhomo Campus) and Capricorn (Seshego Campus).

9.2.3 Verification of datasets and standardisation booklets

The datasets were verified before the printing of the final standardisation booklets. The number of candidates processed, the calculation of the norms, the adjusted marks, raw marks and the graphs were verified and approved after several corrections had been made.

9.2.4 Pre-standardisation and standardisation

The qualitative input, chief marker, internal moderator and external moderator reports, historical averages, pairs analysis as well as the standardisation principles were considered to determine any adjustments to be made per subject.

9.2.5 Post standardisation

The assessment body was required to submit the adjustment file for approval after the approved standardisation decisions. These were verified and approved at first submission.

9.3 Findings and Decisions

9.3.1 Development of historical averages

The historical norm for the NATED Report 190/191: Engineering Studies N2 and N3 and the Business Languages was submitted, verified and approved after rectifications. Outliers were identified and, where applicable, the principle of exclusion was applied to develop the November 2016 final norm.

Table 9A below indicates the subjects which were identified as outliers.

Table 9A: Outliers excluded from norm setting

Level	Subject	Excluded Exam sitting
N2	Welder's Theory 11022082	April 2015
N3	Engineering Science 15070413	August 2015

Level	Subject	Excluded Exam sitting
N3	Welder's Theory 11022082	April 2015
	Mathematics 16030143	April 2016
	Water Treatment Practice 8120033	April 2016
	Plant Operation Theory 11040023	April 2014

9.3.2 Capturing of marks

The DHET developed a management plan and general guidelines for the capturing of marks. Marks for internal assessment and end of year examinations (N1) were captured by the TVET colleges/centres and sent to DHET as text files and uploaded onto the mainframe. The DHET did spot checks/selective verification to verify the veracity of the marks.

The DHET appointed all the data capturers for N2 and N3 examination marks. The DHET trained the capturing coordinators and they in turn trained the data capturers. The signed contracts as well as the declaration of confidentiality were availed as evidence. The attendance registers and the training manuals were availed as evidence during the verification of capturing of examination marks at the Orbit (Brits Campus), Tshwane South (Pretoria West Campus), Nkangala (Mpondozankhomo Campus) and Capricorn (Seshego Campus) of the TVET Colleges.

The DHET utilized a scanning programme called MPFLOW to manage and control mark sheets. The mark sheets were scanned during despatch and on return.

A total of 3 538 mark sheets for NATED N3 were scheduled for capturing at the Tshwane South TVET College (Pretoria West Campus). At the time of monitoring, 3 437 mark sheets had been captured and verified. At the Capricorn TVET College a total of 9 175 mark sheets for NATED were captured and verified, only 318 mark sheets were still to be captured at the time of monitoring. The late arrival of mark sheets from other campuses contributed to capturing falling behind schedule. The capturing of marks ran parallel to the marking process to ensure that all marks were captured in time for the standardisation process. The DHET utilized an offline capturing tool to capture marks. The standalone computers were used for the capturing of marks, data was backed up daily and exported to the DHET office.

All capturing that was done at the marking centre was verified i.e. double capturing was applied to authenticate marks. Capturers and verifiers were allocated user IDs. A user could only be allocated one function either capturing or verifying. This was verified on-site at the Tshwane South (Pretoria West Campus) and Capricorn (Seshego Campus) marking centres. However, the capturer and verifier used the same computer and sat next to each other which exposes the process of double capturing to collusion.

The capturing facility was under 24-hour security surveillance. Access to the centre was controlled by access cards and or a bio-matrix system was in place.

Contingency plan measures were in place in all the centres monitored: i.e. standby computers were available; daily backup was implemented and captured data was exported to DHET on a daily basis. A standby UPS was available in case of a power failure. The DHET had an arrangement with SITA (BETA) to use their facility as a back-up plan in the case of system or power failures.

9.3.3 Verification of datasets and standardisation booklets

The DHET systems were verified at the November 2016 examinations standardisation meeting. The datasets were verified and approved after several moderations. Delays were experienced in the approval of the electronic standardisation booklets, because the April 2016 and August 2016 examinations marks were not aligned with the statistics table. However, the misalignment was rectified and the marks were approved by Umalusi before the standardisation meeting.

9.3.4 Pre-standardisation and standardisation

a) Pre-standardisation

The pre-standardisation meeting took place on the 20th of December 2016. The Assessment Standards Committee (ASC) of Umalusi's Council discussed the learner performance per subject. In the decision making, the ASC also considered the qualitative input from reports on some subjects which was presented by Umalusi staff and external moderators. There were preliminary decisions made on adjustments at the pre-standardisation meeting.

b) Standardisation meeting

The November 2016 NATED Report 190/191: Engineering Studies N2–N3 results were standardised at the meeting on the 20th of December 2016.

The DHET presented a total of 59 instructional offerings for the standardisation of the NATED Report 190/191: Engineering Studies N2 and N3 programmes. The four Business Languages were presented on the 22nd of December 2016.

Forty-eight subjects were standardised for the NATED Report 190/191: Engineering Studies and only one was provisionally standardised. A total of ten subjects were not standardised, eight due to a low capture rate, while two due to a suspected irregularity. The ASC requested the DHET to investigate the alleged irregularity. Four subjects were standardised for the Business Languages.

The decisions on the November 2016 NATED Report 190/191: Engineering Studies N2–N3 were informed by the trends in learner performance, the qualitative input reports, the historical norm and the pairs analysis.

Table 9B: Standardisation decisions NATED Report 190/191: Engineering Studies N2 and N3

Description	Total
Number of instructional offerings presented	59
Raw marks accepted	20
Adjustments (mainly upwards)	14
Adjustments (mainly downwards)	14
Provisionally standardised	1
Not standardised	10
Number of instructional offerings standardised	49

Table 9C: Standardisation decisions Business Languages

Description	Total
Number of instructional offerings presented	4
Raw mark	4
Number of instructional offerings standardised	4

9.4 Areas of Good Practice

- The DHET submitted the booklets within the set time frames.
- The sites monitored for the capturing of marks had adequate and experienced data capturers and a guideline document for the capturing of marks.
- The scanning as a control measure for the flow of mark sheets in and out the capturing centre is commendable.

9.5 Areas of Concern

- The subjects for N2 and N3 in the booklets are not arranged in alphabetical order.
- The verification of the statistical moderation and resulting was not completed by the time of the approval meeting of results.

9.6 Directives for Improvement and Compliance

The DHET must ensure that all subjects for N2 and N3 are arranged in alphabetical order regardless of the level.

9.7 Conclusion

Although the DHET standardisation statistics table and graphs booklet 1 and the percentage distribution and pairs analysis booklet were not aligned, the credibility of the DHET NATED examination was not compromised.

The standardisation process was conducted in a systematic, objective and transparent manner. The decisions taken on whether to accept the raw marks or to perform slight upward or downward adjustments were based on sound educational reasoning. The majority of the DHET proposals corresponded with those of Umalusi, which is a clear indication of a maturing examination system.

CHAPTER 10: CERTIFICATION

10.1 Introduction and Purpose

This chapter serves to inform interested parties of the current state of the certification of learner achievement for the National N3 and National Senior Certificate (Colleges).

Umalusi affirms the adherence to policies promulgated by the Minister of Higher Education and Training for the National N3 and National Senior Certificate (Colleges). Through the founding General and Further Education and Training Act (GENFETQA) 2001 (Act No. 58 of 2001), as amended, Umalusi is responsible for the certification of learner achievement in South African qualifications that are registered on the General and Further Education and Training Sub-framework of the National Qualifications Framework (NQF), including the National Senior Certificate: a qualification at Level 4 on the NQF (NSC).

Certification is the culmination of all the quality assurance processes, including a final examination process conducted by an assessment body, in this instance the Department of Higher Education and Training (DHET).

This process has a number of steps, commencing with the registration of students and ending with the writing of the examination and the issuing of the results. Once the candidate has written the examination, which is administered by the assessment body, the examination scripts are marked, the marks are processed and only after quality assurance and approval by Umalusi are students presented with individual Statements of Results (SoR). These documents are preliminary, outlining the outcomes of the examination, and are issued by the assessment body. The SoRs are, in due course, replaced by the final document, a certificate issued by Umalusi. (Certain additional processes, such as re-marks and/or supplementary examinations may cause changes to be made to marks between the issuing of the SoR and the final certificate, but these changes must be quality assured by Umalusi before certification.)

Umalusi currently charges only private colleges certification fees. Certification for public TVET colleges is funded by a funding agreement with the Department of Basic Education.

10.2 Scope and Approach

In order to give effect to its certification mandate, Umalusi must ensure that certification data have been submitted in the format prescribed by Council, and that the data are both valid and reliable. For this reason, Umalusi publishes directives for certification that must be adhered to by all assessment bodies when they submit candidate data for the certification of a specific qualification. The DHET must therefore ensure that all records of candidates who registered for the N3 examinations, including those who qualify for a subject only in a particular examination cycle, are submitted to Umalusi for certification.

On receipt of these data, Umalusi verifies that the certification request adheres to the policy governing the N3. Where the policy has not been adhered to, the record is rejected and the DHET is required to make the necessary corrections and resubmit the record.

Where a candidate has met the requirements for the awarding of the National N3 certificate in four subjects and has also met the pass requirements in Business Languages, this candidate may achieve the National Senior Certificate (Colleges), which is a qualification at NQF Level 4. Currently, this qualification has no articulation possibilities and the Umalusi Council has, therefore, made the decision that it be phased out with effect from January 2018.

The state of readiness visits and certification requests received form the basis of this report.

10.3 Summary of Findings

During the state of readiness visit the following findings were made:

1. Candidates are clearly not required to sign the preliminary schedule of entries. In addition, this preliminary schedule of entries provides no indication that the candidate has confirmed that the information is true and correct. Preliminary schedules of entries are not consistently signed by centre managers. This is a regrettable state of affairs that has consequences for subsequent processes.

2. Candidates are automatically reregistered from one examination to the next, even in cases where the candidate has changed centres, programmes or subjects. The DHET does not deregister candidates at a particular college or from a particular subject that might no longer be applicable. As a result, a candidate may be registered at more than one centre, for more than one programme and for the wrong subjects. At certification, this confusion causes problems as a candidate cannot be certified for the same examination date at two centres, for example. Only one record will be accepted; the other will be rejected.

3. The manner in which the registration of student information, ultimately used for certification, is managed is of grave concern as it opens the way for many inaccuracies at the point of certification.

The following certificates were issued for examination dates November 2015, March 2016 and August 2016:

Table 10A: Certificates issued for examination dates November 2015 to August 2016

Type of certificate issued	Number issued
Subject Certificate	40 513
N3 Certificate	7 170
NSC	3
Replacement N3 certificate (Lost)	4 789
Replacement NSC (Lost)	6
Total	**52 481**

10.4 Areas of Good Practice

The certification for N3 is generally processed in good time.

10.5 Areas of Concern

- The registration of candidates must be better managed in order to ensure that candidates are registered at the correct centre and for the correct subjects. Where necessary, candidates should be deregistered from a programme, centre or subject according to the information on the signed schedule of entries; and
- Candidates do not sign a schedule of entries, which would validate the information captured on the examination system. When queries arise regarding incorrect information, the candidate has no proof that the error was made by the assessment body. This is a problematic state of affairs.

10.6 Directives for Compliance and Improvement

- It is imperative that the registration of candidates be managed effectively at the correct centre, for the correct programme and subject(s);
- Candidates must be required to sign a schedule of entries, authenticating the accuracy of the registration data;
- All changes to the schedule of entries must be signed, counter-signed and dated; and
- The schedule of entries must be signed by the centre manager/admissions manager, indicating that all candidates have authenticated the information, and that the centre validates this information.

10.7 Conclusion

The N3 certification is at a level where candidates are certificated, but the registration data may not be accurate. The planning for certification of these candidates thus leaves much to be desired.

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