

UMALUSI



Quality Council for General and Further
Education and Training

Report on the Quality Assurance of
the April 2021 NATED Report
190/191: Engineering Studies N2–N3
Examinations Administered by the
Department of Higher Education
and Training (DHET)



REPORT ON THE QUALITY ASSURANCE OF THE
APRIL 2021 NATED REPORT 190/191: ENGINEERING
STUDIES N2–N3 EXAMINATIONS ADMINISTERED BY
THE DEPARTMENT OF HIGHER EDUCATION AND
TRAINING (DHET)

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INTRODUCTION AND BACKGROUND

The NATED Report 190/191: Engineering Studies N2–N3 examinations are administered and managed by the Department of Higher Education and Training (DHET) on a trimester basis in April, August and November of each year. Programmes for these examinations are offered by public Technical and Vocational Education and Training (TVET) colleges, private Further Education and Training (FET) colleges, some correctional services centres and a few centres outside the borders of South Africa.

As a Quality Council, Umalusi, is mandated by the National Qualifications Framework (NQF) and General and Further Education and Training Quality Assurance (GENFETQA) Acts to develop and implement policy and criteria for assessment of the qualifications on its sub-framework. The NATED Report 190/191: Engineering Studies N1–N3 is registered by SAQA as a programme on the Umalusi sub-framework.

As the Quality Council for General and Further Education and Training, Umalusi:

- a. Must perform the external moderation of assessment of the various assessment bodies and education institutions;
- b. May adjust raw marks during the standardisation process; and
- c. Must, with the consensus of the Director-General and after consultation with the relevant assessment body or education institution, approve the publication of the results of learners if the Council is satisfied that the assessment body or education institution has:
 - i. Conducted the assessment free from any irregularity that might jeopardise the integrity of the assessment or its outcomes;
 - ii. Complied with the requirements prescribed by the Council for conducting assessments;
 - iii. Applied the standards prescribed by the Council with which a learner is required to comply to obtain a certificate; and
 - iv. Complied with every other condition determined by the Council.

Umalusi therefore has a mandate to ensure that the NATED Report 190/191: Engineering Studies N2–N3 examinations conducted each trimester are fair, valid and reliable. To perform this function, Umalusi is required to ensure that the quality and standard of all the assessment practices associated with the NATED Report 190/191: Engineering Studies N2–N3 examinations are set and maintained.

All the question papers for the April 2021 examinations were set nationally by the DHET and moderated externally by Umalusi. The DHET distributed question papers via courier to nodal points for collection by examination centres. Once the examinations had been written, answer scripts had to be returned to the nodal points within 60 minutes, of the stipulated end time of examinations, as per regulations. Drawing subjects were written during the first week of the examination session. All the April 2021 examinations were written during morning sessions, starting at 09:00.

The DHET mandated the marking centre management staff of the national and provincial marking centres to make use of the marking personnel who had been appointed for the November 2020 NATED Report 190/191 examinations.

The DHET followed a decentralised (provincial) marking model for most N2 instructional offerings and a centralised (national) model for most N3 instructional offerings. The N2 marking guidelines were standardised on-line, after which they were distributed electronically to the marking centres.

As in previous examinations, the April 2021 NATED Report 190/191: Engineering Studies N2–N3 examinations were conducted at some correctional services centres, private colleges, public colleges, and a few centres outside the borders of South Africa.

As repeatedly reported in the past, the execution of the NATED Report 190/191: Engineering Studies N2–N3 programmes and examinations present several challenges, the commonest of which include, but are not limited to:

- a. Outdated syllabi;
- b. No provision for exposure to practical components of development skills;
- c. Lack of lecturer capacity for effective tuition; and
- d. High numbers of candidates registering but failing to write the examinations.

The purpose of this report is to provide feedback on the processes followed by Umalusi in the quality assurance of the April 2021 NATED Report 190/191: Engineering Studies N2–N3 examinations. The report also presents the findings, areas of compliance/improvement in the conduct, administration and management of these examinations, and areas of non-compliance and directives for compliance. The findings are based on information derived from the Umalusi moderation, monitoring, verification and standardisation processes, as well as from reports received from the DHET.

This report covers the following quality assurance processes implemented by Umalusi:

- i. Moderation of question papers from a sample of N2 and N3 instructional offerings;
- ii. Monitoring/moderation of internal assessment;
- iii. Monitoring of the writing of examinations;
- iv. Monitoring of the marking of examinations;
- v. Standardisation of marking guidelines;
- vi. Verification of marking; and
- vii. Standardisation and resulting.

ABBREVIATIONS AND ACRONYMS

ASC	Assessment Standards Committee
CD: NEA	Chief Directorate: National Examinations and Assessment
CEO	Chief Executive Officer
DHET	Department of Higher Education and Training
DMCA	Deputy Marking Centre Manager Academic
EC	Eastern Cape
FET	Further Education and Training
FS	Free State
GP	Gauteng
GFETQSF	General and Further Education and Training Qualifications Sub-framework
GENFETQA	General and Further Education and Training Quality Assurance
GPW	Government Printing Works
HOD	Head of Department
ID	Identity Document
ICASS	Internal Continuous Assessment
KZN	KwaZulu-Natal
LP	Limpopo
MP	Mpumalanga
NQF	National Qualifications Framework
NW	North West Province
NC	Northern Cape
OHS	Occupational Health and Safety
PAM	Personnel Administrative Measures
PoA	Portfolio of Assessment (lecturer portfolio)
PoE	Portfolio of Evidence (learner portfolio)
SA	South Africa
SACE	South African Council for Educators
SMS	Short Message Service
SOR	State of Readiness
TVET	Technical and Vocational Education and Training
WC	Western Cape

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CHAPTER 1 MODERATION OF QUESTION PAPERS

1.1 Introduction

Umalusi conducts external moderation of question papers that are set nationally by the Department of Higher Education and Training (DHET). The purpose of external moderation of examination question papers and marking guidelines is to ensure that quality and standards are maintained in all the NATED Report 190/191: Engineering Studies N2–N3 examination cycles.

The moderation of question papers is a critical element of the quality assurance of the assessment process. The external moderation process confirms that the question papers have been developed with rigour and that they comply with Umalusi's criteria and the curriculum and assessment policy documents of the assessment body.

The DHET is expected to appoint examiners and internal moderators with the requisite content knowledge in the instructional offerings to set and internally moderate the question papers before they are presented to Umalusi for external moderation. The question papers and marking guidelines are expected to be print-ready when submitted to Umalusi for external moderation. It therefore remains the specific responsibility of the internal moderators to ensure that the question papers and marking guidelines are of an acceptable standard.

To maintain public confidence in the national examination system, the question papers must furthermore be seen to be:

- a. Fair;
- b. Reliable;
- c. Within the scope of the national curriculum and assessment guideline;
- d. Representative of relevant conceptual domains; and
- e. Representative of relevant levels of cognitive demand.

1.2 Scope and Approach

Umalusi moderated and approved a total of 44 question papers and marking guidelines for the April 2021 NATED Report 190/191: Engineering Studies N2–N3 examinations.

The instructional offerings were moderated off-site; question papers, marking guidelines, assessment frameworks and internal moderators' reports were forwarded electronically to external moderators.

Table 1A indicates the selected instructional offerings moderated per level:

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

Instructional Offerings	Level
Aircraft Maintenance Theory	N3
Building and Civil Technology	N3
Building Drawing	N2 and N3
Bricklaying and Plastering Theory	N2
Building Science	N2 and N3
Carpentry and Roofing Theory	N2
Diesel Trade Theory	N2 and N3
Electrical Trade Theory	N2 and N3
Electrotechnology	N3
Engineering Drawing	N2 and N3
Engineering Science	N2 and N3
Fitting and Machining Theory	N2
Industrial Electronics	N2 and N3
Industrial Organisation and Planning	N3
Industrial Orientation	N3
Instrument Trade Theory	N2 and N3
Logic Systems	N2 and N3
Mathematics	N2 and N3
Mechanotechnology	N3
Motor Trade Theory	N2 and N3
Plant Operation Theory	N2 and N3
Platers' Theory	N2
Plating and Structural Steel Drawing	N2 and N3
Plumbing Theory	N2
Radio and Television Theory	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
Welders' Theory	N2

The criteria according to which the question papers were moderated included the following aspects:

- a. Technical aspects related to the presentation of the question papers and marking guidelines;
- b. Effectiveness of internal moderation in improving the quality of question papers;
- c. Adherence to the syllabus with respect to content coverage;
- d. Types of questions, formulation and clarity of questions;
- e. Distribution of marks across cognitive levels;
- f. Consistency and appropriateness of mark allocation;
- g. Relevance and correctness of the marking guidelines;
- h. Appropriateness of language register, correct use of grammar in question papers and marking guidelines and content that is free from bias;
- i. Degree of predictability of questions and innovation in question papers; and

- j. An overall evaluation of the question papers in terms of their suitability for the level assessed.

1.3 Summary of Findings

The preliminary moderation process of the 44 sampled question papers resulted in the following findings:

- Six question papers and four marking guidelines were approved and print-ready;
- Fifteen question papers and 18 marking guidelines were approved but required minor technical changes;
- Twenty question papers and 19 marking guidelines were conditionally approved; these required amendments such as rephrasing or replacement of questions; and
- Three question papers together with their marking guidelines were rejected and required resetting and resubmission for external moderation.

Table 1B: Approval status of question papers and marking guidelines after preliminary moderation

Status	Question papers of instructional offerings concerned	Marking guidelines of instructional offerings concerned
Approved: Print ready	Bricklaying and Plastering Theory N2 Building and Civil Technology N3 Diesel Trade Theory N2 Instrument Trade Theory N3 Waste-water Treatment Practice N3 Water and Waste-water Treatment Practice N2	Diesel Trade Theory N2 Engineering Science N2 Instrument Trade Theory N3 Motor Trade Theory N2
Approved: Minor technical changes	Aircraft Maintenance Theory N3 Building Drawing N2 Building Science N2 and N3 Engineering Science N3 Industrial Electronics N2 and N3 Industrial Orientation N3 Instrument Trade Theory N2 Motor Trade Theory N2 and N3 Plating and Structural Steel Drawing N2 and N3 Plumbing Theory N2 Supervision in Industry N3	Aircraft Maintenance Theory N3 Bricklaying and Plastering Theory N2 Building and Civil Technology N3 Building Drawing N2 Building Science N2 and N3 Electrotechnology N3 Engineering Drawing N3 Engineering Science N3 Industrial Electronics N2 and N3 Industrial Orientation N3 Instrument Trade Theory N2 Motor Trade Theory N3 Plating and Structural Steel Drawing N2 and N3 Plumbing Theory N2 Waste-water Treatment Practice N3
Conditionally approved: Questions/answers require restructuring/ rephrasing	Electrical Trade Theory N3 Engineering Drawing N3 Engineering Science N2 Platers' Theory N2 Welders' Theory N2	Carpentry and Roof Work N2 Electrical Trade Theory N2 and N3 Industrial Organisation and Planning N3 Mathematics N3

Status	Question papers of instructional offerings concerned	Marking guidelines of instructional offerings concerned
<p>Conditionally approved: Questions/answers require replacement</p>	<p>Logic Systems N2</p>	<p>Fitting and Machining Theory N2 Logic Systems N2 and N3 Mathematics N2 Mechanotechnology N3 Plant Operation Theory N2 Plant Operation Theory N3 Platers' Theory N2 Practice N2 Radio and Television Theory N3 Refrigeration Trade Theory N3 Supervision in Industry N3 Water and Waste-water Treatment Water Treatment Practice N3 Welders' Theory N2</p>
<p>Conditionally approved: Questions require restructuring/ rephrasing/ replacement</p>	<p>Carpentry and Roof Work N2 Electrical Trade Theory N2 Electro-technology N3 Fitting and Machining Theory N2 Industrial Organisation and Planning N3 Logic Systems N3 Mathematics N2 and N3 Mechanotechnology N3 Plant Operation Theory N2 and N3 Radio and Television Theory N3 Refrigeration Trade Theory N3 Water Treatment Practice N3</p>	
<p>Rejected: Question paper to be reset and resubmitted for internal and external moderation</p>	<p>Building Drawing N3 Diesel Trade Theory N3 Engineering Drawing N2</p>	<p>Building Drawing N3 Diesel Trade Theory N3 Engineering Drawing N2</p>
<p>Conditionally approved: Questions/answers require replacement</p>	<p>Logic Systems N2</p>	<p>Fitting and Machining Theory N2 Logic Systems N2 and N3 Mathematics N2 Mechanotechnology N3 Plant Operation Theory N2 Plant Operation Theory N3 Platers' Theory N2 Practice N2 Radio and Television Theory N3 Refrigeration Trade Theory N3 Supervision in Industry N3 Water and Waste-water Treatment Water Treatment Practice N3 Welders' Theory N2</p>

The graphs below (Figure 1A and 1B) provide a summary of the findings at first moderation of the question papers and the marking guidelines as captured from the external moderators' reports.

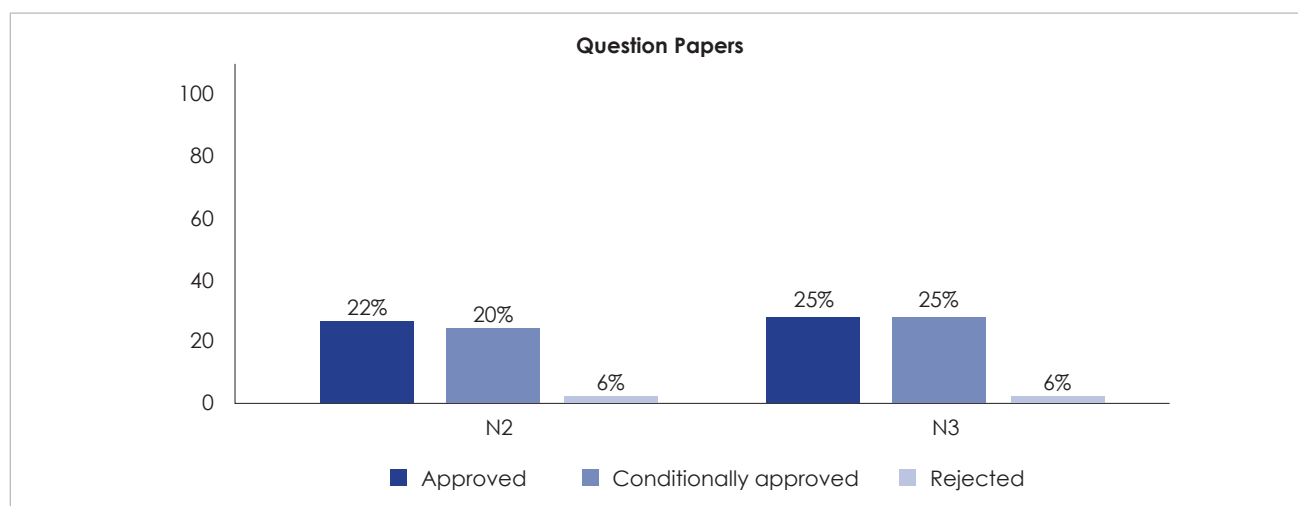


Figure 1A: Approval Status of the NATED Report 190/191: Engineering Studies question papers after first moderation

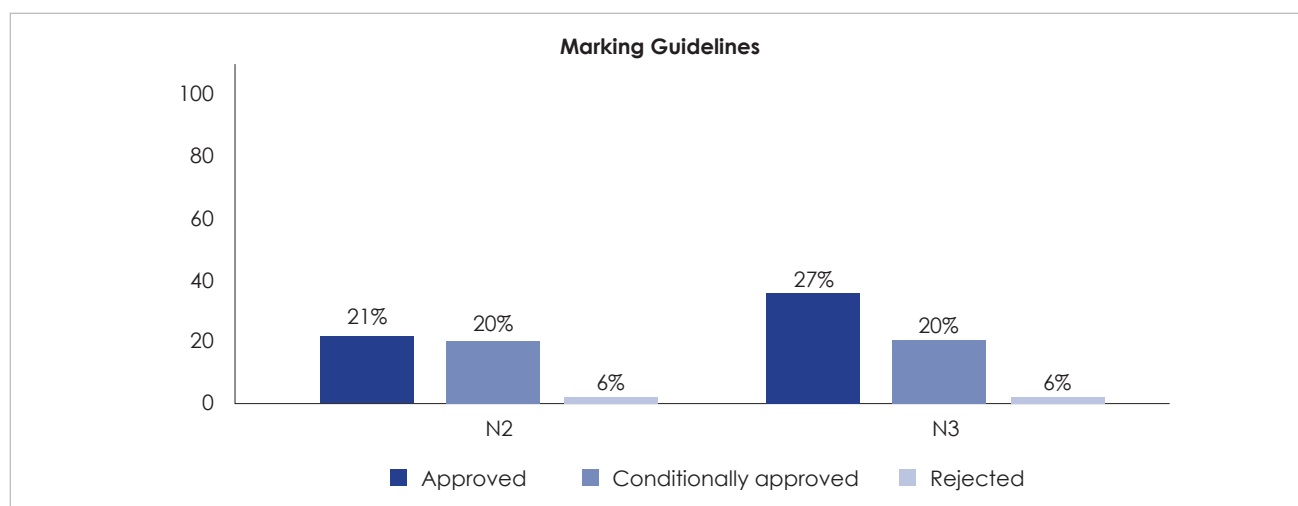


Figure 1B: Approval Status of the NATED Report 190/191: Engineering Studies marking guidelines after first moderation

Table 1C provides a summary of the most significant findings from the moderation of the April 2021 examination question papers and marking guidelines. All findings are discussed in terms of the sample of 44 instructional offerings moderated.

Table 1C: Summary of findings of the initial moderation of question papers

Criterion	Challenges	Instructional offering concerned
Technical criteria		
Submission of supporting documents	Neither the assessment grid nor internal moderation report were received for six question papers (14%), compared to 8% during the August 2020 examinations.	Bricklaying and Plastering Theory N2 Engineering Drawing N2 and N3 Mathematics N3 Plant Operation Theory N3 Refrigeration Trade Theory N3

Status	Question papers of instructional offerings concerned	Marking guidelines of instructional offerings concerned
Technical criteria		
Layout of the question paper	The cover page of four question papers (9%) did not contain all the necessary details such as the logo, name of instructional offering, time allocation, number of pages and additional information; this can be compared to 10% in the August 2020 examinations.	Carpentry and Roof Work N2 Engineering Drawing N2 and N3 Plating and Structural Steel Drawing N2
Layout of the question paper	The layout of two question papers (5%) was not reader-friendly, compared to 13% in the August 2020 examinations.	Building Drawing N2 Mathematics N2
Numbering of pages	Not all pages in two question papers (5%) were correctly numbered; this proportion was the same as in the August 2020 examinations.	Engineering Drawing N2 Supervision in Industry N3
Numbering of questions	Some questions in two question papers (5%) were not correctly numbered; this was the same proportion (as in the August 2020 examinations).	Engineering Drawing N3 Plant Operation Theory N3
Headers and footers	In three question papers (7%), the headers and footers were not consistent and did not adhere to the required format, compared to 5% in the August 2020 examinations.	Fitting and Machining Theory N2 Plating and Structural Steel Drawing N2 Supervision in Industry N3
Font type and size	Fonts were not used appropriately throughout one question paper (3%) (as in the August 2020 examinations).	Mathematics N2
Mark and time allocation	Mark allocations in three question papers (7%) were not clearly indicated, as was the case in the August examinations.	Aircraft Maintenance Theory N3 Carpentry and Roof Work N2 Plating and Structural Steel Drawing N2
	The mark allocation in six question papers (14%) did not correspond to those in the marking guidelines; this can be compared to 13% in the August examinations.	Building Drawing N2 Mathematics N2 Plant Operation Theory N3 Plating and Structural Steel Drawing N2 and N3 Radio and Television Theory N3
Quality of graphics and illustrations	The quality of illustrations, graphs and tables was not appropriate, not clear, contained errors or not print ready in eight question papers (19%), a decline compared to the 28% in the August 2020 examinations.	Building Drawing N2 Carpentry and Roof Work N2 Engineering Drawing N2 and N3 Engineering Science N3 Mathematics N2 and N3 Plant Operation Theory N3
Format requirements	One question paper (6%) did not adhere to the format requirements of the syllabus.	Fitting and Machining Theory N2

Status	Question papers of instructional offerings concerned	Marking guidelines of instructional offerings concerned
Internal moderation		
Incomplete moderator reports	The moderator reports for 11 question papers (25%) were not complete, the same proportion as in the August 2020 examinations.	Bricklaying and Plastering Theory N2 Building Drawing N2 and N3 Building Science N2 Engineering Drawing N2 Fitting and Machining Theory N2 Logic Systems N2 and N3 Mathematics N3 Refrigeration Trade Theory N3 Water and Waste-water Treatment Practice N2
Quality and standard of internal moderation report	The internal moderation reports for nine question papers (25%) were unsatisfactory, compared to 18% in the August 2020 examinations.	Bricklaying and Plastering Theory N2 Building Drawing N3 Carpentry and Roof Work N2 Electrical Trade Theory N2 Engineering Drawing N2 Fitting and Machining Theory N2 Logic Systems N2 Mathematics N2 Radio and Television Theory N3
	The internal moderation reports for six question papers (25%) were not of a satisfactory standard; the same proportion as in the August 2020 examinations.	Bricklaying and Plastering Theory N2 Building Drawing N3 Fitting and Machining Theory N2 Industrial Electronics N2 and N3 Mathematics N2
Recommendations and implementation of recommendations	There was no evidence in nine question papers (43%) that the internal moderator's recommendations had been addressed or implemented, compared to 18% in the August 2020 examinations.	Bricklaying and Plastering Theory N2 Building Drawing N3 Carpentry and Roof Work N2 Fitting and Machining Theory N2 Logic Systems N3 Mathematics N2 Motor Trade Theory N3 Plant Operation Theory N2 Radio and Television Theory N3
Content coverage		
Coverage of the syllabus	The syllabus was not adequately covered in four question papers (8%), the same proportion as in the August 2020 examinations.	Diesel Trade Theory N3 Logic Systems N2 and N3 Mathematics N2
	Several questions in four question papers (9%) were beyond the scope of the syllabus; this can be compared to 5% in the August 2020 examinations.	Diesel Trade Theory N3 Fitting and Machining Theory N2 Logic Systems N2 and N3

Status	Question papers of instructional offerings concerned	Marking guidelines of instructional offerings concerned
Internal moderation		
	In two question papers (7%), topics were not spread appropriately across the question paper; this can be compared to the 5% in the August 2020 examinations.	Diesel Trade Theory N3 Mathematics N3
	In three question papers (7%), topics were not appropriately linked or integrated, as in the August 2020 examinations.	Diesel Trade Theory N3 Mathematics N2 and N3
	Four question papers (10%) did not reflect the latest developments in the teaching of the instructional offerings, compared to 18% in the August 2020 examinations.	Building Drawing N2 Mathematics N2 and N3 Plant Operation Theory N2
Types and quality of questions		
Types of questions	Two question papers (5%) did not allow for creative responses from candidates, compared to 13% in the August 2020 examinations.	Building Science N3 Engineering Science N3
	There was no correlation between mark allocation and level of difficulty or time allocation in questions in eight question papers (18%), compared to 13% in the August 2020 examinations.	Bricklaying and Plastering Theory N2 Carpentry and Roof Work N2 Engineering Drawing N2 Fitting and Machining Theory N2 Mathematics N3 Plant Operation Theory N2 and N3 Water Treatment Practice N3
Quality of questions	Questions in two question papers (5%) did not relate to pertinent issues in the instructional offerings; this was the same proportion as in the August 2020 examinations.	Fitting and Machining Theory N2 Industrial Organisation and Planning N3
	Questions in eight question papers (19%) contained vaguely defined problems, ambiguous wording, extraneous or irrelevant information, trivia or unintentional clues to the correct answers, compared to 18% in the August 2020 examinations.	Carpentry and Roof Work N2 Electrotechnology N3 Industrial Electronics N3 Logic Systems N3 Plant Operation Theory N2 and N3 Refrigeration Trade Theory N3 Water Treatment Practice N3
	Questions in five question papers (11%) did not provide clear instructional key words/verbs.	Building Drawing N3 Carpentry and Roof Work N2 Fitting and Machining Theory N2 Industrial Electronics N3 Plant Operation Theory N2

Status	Question papers of instructional offerings concerned	Marking guidelines of instructional offerings concerned
Types and quality of questions		
	Some questions in 11 question papers (25%) did not contain sufficient information to elicit appropriate responses, compared to 10% in the August 2020 examinations.	Building Drawing N3 Carpentry and Roof Work N2 Engineering Drawing N2 Engineering Science N2 Industrial Electronics N2 and N3 Industrial Organisation and Planning N3 Logic Systems N3 Mathematics N2 and N3 Plant Operation Theory N3
	Six question papers (14%) contained factual errors or misleading information, compared to 8% in the August 2020 examinations.	Building Drawing N3 Building Science N2 and N3 Engineering Science N2 Mathematics N2 Plant Operation Theory N3
	All references in questions to visuals, drawings, illustrations, examples, tables, graphs were relevant and correct in 36 question papers (81%), compared to 72% in the August 2020 examinations.	
Cognitive skills		
Analysis grid	Analysis grids in 14 question papers (33%) did not indicate the cognitive level of each question/sub-question, compared to 18% in the August 2020 examinations.	Bricklaying and Plastering Theory N2 Building Science N2 Electrical Trade Theory N2 Engineering Drawing N2 and N3 Fitting and Machining Theory N2 Logic Systems N2 and N3 Mathematics N2 and N3 Mechanotechnology N3 Plant Operation Theory N3 Plating and Structural Steel Drawing N2 Refrigeration Trade Theory N3
	Marks were inappropriately distributed across cognitive levels in seven question papers (12%), compared to 20% in the August 2020 examinations.	Engineering Drawing N2 Fitting and Machining Theory N2 Logic Systems N2 and N3 Mathematics N2 and N3 Plant Operation Theory N3
Assessment of latest developments	Five question papers (15%) did not reflect the latest developments in the knowledge field; this can be compared to 13% in the August 2020 examinations.	Aircraft Maintenance Theory N3 Building Drawing N3 Industrial Organisation and Planning N3 Mathematics N3 Motor Trade Theory N2

Status	Question papers of instructional offerings concerned	Marking guidelines of instructional offerings concerned
Marking guidelines		
Accuracy of marking guidelines	Some answers in seven marking guidelines (18%) did not correspond to the questions in the question paper, an increase from 8% in the August 2020 examinations.	Building Drawing N2 and N3 Carpentry and Roof Work N2 Logic Systems N2 Mathematics N2 Plant Operation Theory N3 Plating and Structural Steel Drawing N3
	Seventeen marking guidelines (42%) contained answers that were not accurate, an increase compared to 25% in the August 2020 examinations.	Bricklaying and Plastering Theory N2 Building Drawing N3 Building Science N2 and N3 Carpentry and Roof Work N2 Engineering Drawing N2 and N3 Engineering Science N2 Logic Systems N2 and N3 Mechanotechnology N3 Plant Operation Theory N2 and N3 Plating and Structural Steel Drawing N2 Radio and Television Theory N3 Refrigeration Trade Theory N3 Supervision in Industry N3
	Seven marking guidelines (27%) did not make provision for alternative responses, where these were possible, compared to 13% in the August 2020 examinations.	Aircraft Maintenance Theory N3 Building Drawing N2 Building Science N2 Engineering Science N2 Mathematics N3 Plant Operation Theory N3 Water and Waste-water Treatment Practice N2
Layout of marking guidelines	The marking guidelines for five question papers (9%) were not set out clearly, a decrease from 13% in the August 2020 examinations.	Engineering Drawing N2 and N3 Mathematics N3 Plating and Structural Steel Drawing N2 and N3
	The marking guideline for one question paper (2%) was very poor; this can be compared to 5% in the August 2020 examinations.	Plating and Structural Steel Drawing N3
Mark allocation	The allocation of marks in some questions were incomplete in six marking guidelines (14%), compared to 25% in the August 2020 examinations.	Building Drawing N2 Logic Systems N3 Plating and Structural Steel Drawing N2 and N3 Radio and Television Theory N3 Water and Waste-water Treatment Practice N2

Status	Question papers of instructional offerings concerned	Marking guidelines of instructional offerings concerned
Marking guidelines		
Facilitation of marking	Twelve marking guidelines (16%) would not have facilitated effective marking, compared to 28% in the August 2020 examinations.	Aircraft Maintenance Theory N3 Carpentry and Roof Work N2 Engineering Drawing N2 and N3 Industrial Electronics N3 Logic Systems N3 Plant Operation Theory N2 and N3 Plating and Structural Steel Drawing N2 and N3 Radio and Television Theory N3 Supervision in Industry N3
Language and bias		
Grammar	Grammar in four question papers (9%) contained complexities that might have confused candidates, the same proportion as in the August 2020 examinations.	Building Drawing N3 Carpentry and Roof Work N2 Industrial Electronics N3 Plumbing Theory N2
Predictability		
Use of questions from previous examinations	Six question papers (14%) contained questions that could easily have been spotted or predicted, compared to 10% in the August 2020 examinations.	Bricklaying and Plastering Theory N2 Building Drawing N3 Engineering Drawing N2 Mathematics N2 and N3 Radio and Television Theory N3
	Five question papers (11%) contained questions from examinations from the past three years, compared to 10% in the August 2020 examinations.	Bricklaying and Plastering Theory N2 Building Drawing N3 Electrotechnology N3 Engineering Drawing N2 Radio and Television Theory N3
Innovation	Four question papers (9%) lacked an adequate degree of innovation, compared to 13% in the August 2020 examinations.	Engineering Drawing N2 Mathematics N3 Motor Trade Theory N3 Radio and Television Theory N3
Overall impression		
Standard of question papers	Three question papers (9%) did not satisfy all the requirements of the syllabus, compared to 10% in the August 2020 examinations.	Diesel Trade Theory N3 Fitting and Machining Theory N2 Mathematics N3
	Two question papers (5%) did not assess the outcomes of the curriculum/ syllabus.	Diesel Trade Theory N3 Fitting and Machining Theory N2
	The standard of six question papers (16%) was not appropriate, an increase compared to 15% in the August 2020 examinations.	Bricklaying and Plastering Theory N2 Building Drawing N3 Diesel Trade Theory N3 Fitting and Machining Theory N2 Mathematics N3 Radio and Television Theory N3

Status	Question papers of instructional offerings concerned	Marking guidelines of instructional offerings concerned
Overall impression		
	Five question papers (14%) did not compare favourably to those of previous years, compared to 13% in the August 2020 examinations.	Diesel Trade Theory N3 Fitting and Machining Theory N2 Industrial Organisation and Planning N3 Mathematics N3 Radio and Television Theory N3
	Four question papers (11%) were not of the same standard as those from the previous cycle; this can be compared to 10% in the August 2020 examinations.	Diesel Trade Theory N3 Industrial Organisation and Planning N3 Mathematics N2 and N3
	There was an imbalance in the assessment of skills, knowledge, attitudes, values and reasoning in one question paper (2%), compared to 10% in the August 2020 examinations.	Mathematics N3

1.4 Areas of Improvement

The following area of improvement was observed during the first moderation of question papers:

- a. In 98% of the question papers, there was a balance in the assessment of skills, knowledge, attitudes, values and reasoning, compared to 90% in the August 2020 examinations.

1.5 Areas of Non-compliance

Umalusi reports revealed the areas of non-compliance listed below:

a. Technical Criteria

- i. The assessment grids and internal moderation reports for six question papers (14%) were not received, and the moderator reports for 11 question papers (25%) were not complete;
- ii. The mark allocation in six question papers (14%) did not correspond to the marking guidelines; and
- iii. The illustrations, graphs and tables in eight question papers (19%) were of a poor quality, were not clear, contained errors or were not print-ready.

b. Internal Moderation

- i. The internal moderation reports for nine question papers (25%) were not of acceptable quality, and those for six question papers (25%) were not of an acceptable standard; and
- ii. Nine question papers (43%) showed no evidence that the internal moderators' recommendations had been addressed or implemented.

c. Content Coverage

- i. The syllabus was not covered adequately in four question papers (8%).

d. Types and Quality of Questions

- i. There was no correlation between mark allocation, level of difficulty or time allocation for questions in eight question papers (19%);
- ii. Questions in eight question papers (19%) contained vaguely defined problems, ambiguous wording, extraneous or irrelevant information, trivia or unintentional clues to correct answers;
- iii. The questions in five question papers (11%) did not provide clear instructional key words/verbs, and in 11 question papers (25%), some questions did not contain sufficient information to elicit an appropriate response;
- iv. Six question papers (14%) contained factual errors or misleading information; and
- v. In eight question papers (19%), references to visuals, drawings, illustrations, examples, tables, graphs were not relevant or were incorrect.

e. Cognitive Skills

- i. The analysis grids in 14 question papers (33%) did not show the cognitive level for each question/sub-question;
- ii. In seven question papers (12%) there was an inappropriate distribution of marks across cognitive levels; and
- iii. Five question papers (15%) did not reflect the latest developments in their knowledge fields.

f. Marking Guidelines

- i. In seven marking guidelines (18%), some answers did not correspond to the particular question in the question paper;
- ii. Seventeen marking guidelines (42%) contained answers that were not accurate;
- iii. Seven marking guidelines (27%) did not make provision for alternative responses, where these were possible, and the allocation of marks in some of the questions in six marking guidelines (14%) were incomplete; and
- iv. Twelve marking guidelines (16%) would not have facilitated effective marking.

g. Predictability

- i. Six question papers (14%) contained questions that could easily have been spotted or predicted while five question papers (11%) contained questions from the past three years' examinations.

1.6 Directives for Compliance and Improvement

Based on the findings in the external moderators' reports, the following directives were issued to improve the quality of question papers and accompanying marking guidelines for national examinations:

The DHET must ensure that:

- a. Appropriate software is used to create high quality diagrams;
- b. Question papers presented for external moderation are accompanied by relevant supporting documents;
- c. Internal moderation is conducted thoroughly, with the aim of improving the quality and standard of question papers;
- d. Question papers adhere to the requirements of the syllabus, and that the instructional offering content is adequately covered;

- e. Marking guidelines are error free, and the allocation of marks within questions is clearly indicated;
- f. Questions are carefully formulated to elicit the desired response;
- g. Examiners refrain from using questions from past papers; and
- h. Syllabi are updated to meet the current demand for skills and knowledge required by industry.

1.7 Conclusion

Poor quality or no internal moderation, the absence of marking guidelines and analysis grids were once again common in this examination cycle. It is important that examiners and moderators adhere strictly to mandatory procedures and ensure that question papers of good quality are produced. The quality and standard of the question papers and marking guidelines could be improved by effective internal moderation.

It is important that the assessment framework is compiled correctly, as this serves as the foundation on which the question paper is constructed. Examiners and internal moderators should adopt creative strategies to limit the predictability of questions.

CHAPTER 2 MODERATION OF THE CONDUCT OF INTERNAL CONTINUOUS ASSESSMENT

2.1 Introduction

Umalusi has been moderating and monitoring the internal assessments of selected NATED Report 190/191: Engineering Studies N2–N3 instructional offerings since 2012.

The main objectives of moderating the internal continuous assessment (ICASS) are to:

- a. Verify that lecturers' portfolios of assessment (PoA) adhere to the ICASS guidelines;
- b. Ensure that evidence is competently collected and documented;
- c. Ascertain the appropriateness and standard of the assessment tasks;
- d. Ensure that assessments are consistently delivered across different sites and that standards are maintained; and
- e. Ensure that the quality assurance of the internal assessment component of NATED Report 190/191: Engineering Studies N2–N3 is maintained.

The purpose of this section of the report is to:

- i. Outline the scope and approach followed in the moderation of internal continuous assessment;
- ii. Provide an indication of the size of the sample included in the quality assurance of the internal continuous assessment exercise;
- iii. Provide an overview of critical findings related to the quality and standard of this internal continuous assessment;
- iv. Highlight areas of improvement and those requiring improvement; and
- v. Make recommendations to enhance the quality of internal assessment.

2.2 Scope and Approach

External moderators from Umalusi were sent to five of the nine provinces between 29 March 2021 and 1 April 2021 to moderate the ICASS of N2 and N3 student and lecturer portfolios from a sample of NATED Report 190/191 instructional offerings. The external moderators drafted reports on their findings at the sampled sites. Twenty instructional offerings, as opposed to 15 in 2020, an increase of 33%, were moderated at ten (six in 2020) private colleges and ten (nine in 2020) public colleges.

Table 2A provides information on the sampled instructional offerings, sites and provinces involved in the external moderation of NATED Report 190/191 ICASS during March/April 2021.

Table 2A: Moderation of Report 190/191 internal continuous assessment

Instructional Offerings	TVET/FET College	Site	Province
Bricklaying and Plastering N2	Denver Technical College of SA	Pretoria	GP
Building Drawing N2	Thekwini City College	Pietermaritzburg	KZN
Building Drawing N3	Umfolozi TVET	Esikhawini	KZN
Building Science N2	Taletso TVET	Mmabatho	NW
Diesel Trade Theory N3	Northern Technical College	Thoyondou	LP
Electrical Trade Theory N2	Central Johannesburg College	Alexandra	GP
Electrical Trade Theory N3	Esayidi TVET	Enyenyenzi	KZN
Electrotechnology N3	Lephalale TVET	Ellisras	LP
Engineering Drawing N3	Western TVET	Carletonville	GP
Engineering Science N2	Brooklyn City College	Pretoria	GP
Industrial Electronics N3	Elangeni TVET	Ntuzuma	KZN
Industrial Organisation and Planning N3	Churchil Resource College	Pretoria	GP
Mathematics N2	Ogwini Comprehensive Technical High School	Durban	KZN
Mathematics N3	Rock of Springs College	Brits	NW
Mechanotechnology N3	Tshwane North TVET	Temba	GP
Motor Trade Theory N3	The Automobile Association of SA	Johannesburg	GP
Plant Operation Theory N2	Vhembe TVET	Techniven	LP
Plumbing Theory N2	False Bay TVET	Westlake	WC
Water and Waste-water Treatment Practice N2	Umbilo Private Technical College	Durban	KZN
Welders' Theory N2	Gauteng City College	Johannesburg	GP

Umalusi' s moderators were also requested to gather information on three additional instructional offerings at each site, as per Table 2C. The sites were not informed prior to the visits of this additional monitoring of specific instructional offerings; the purpose was to prevent any window-dressing of the tasks and accompanying documents.

2.3 Summary of Findings

The section below indicates the findings on the implementation of internal assessment of the Engineering Studies instructional offerings as reported by the external moderators. Any shortcomings found could hamper the effective delivery of the NATED Report 190/191 N2–N3 programmes.

Table 2B: Findings observed in the moderation of April 2021 internal assessment

Criterion	Findings	College/Site
Physical resources	The available facilities at 95% of the sites could accommodate the number of enrolled students.	Brooklyn City College Central Johannesburg College (Alexandra) Churchil Resource College Elangeni TVET (Ntuzuma) Esayidi TVET (Enyenyenzi) False Bay TVET (Westlake) Gauteng City College Lephalale TVET (Ellisras) Northern Technical College Ogwini Comprehensive Technical High School Rock of Springs College (Brits) Taletso TVET (Mmabatho) The Automobile Association of SA Thekwini City College (Pietermaritzburg) Tshwane North TVET (Tomba) Umbilo Private Technical College Umfoloji TVET (Esikhawini) Vhembe TVET (Techniven) Western TVET (Carletonville)
	The textbooks/teaching material at 90% of the sites were available when the classes commenced at the beginning of the trimester.	Brooklyn City College Central Johannesburg College (Alexandra) Churchil Resource College Denver Technical College of SA Elangeni TVET (Ntuzuma) Esayidi TVET (Enyenyenzi) False Bay TVET (Westlake) Gauteng City College Lephalale TVET (Ellisras) Northern Technical College Ogwini Comprehensive Technical High School The Automobile Association of SA Thekwini City College (Pietermaritzburg) Tshwane North TVET (Tomba) Umbilo Private Technical College Umfoloji TVET (Esikhawini) Vhembe TVET (Techniven) Western TVET (Carletonville)
	The students at 45% of the sites were exposed to the practical implementation of the theory component of the instructional offering at the site of learning.	Brooklyn City College Denver Technical College of SA Esayidi TVET (Enyenyenzi) False Bay TVET (Westlake) Gauteng City College Ogwini Comprehensive Technical High School The Automobile Association of SA Thekwini City College (Pietermaritzburg) Vhembe TVET (Techniven)

Criterion	Findings	College/Site
	There were computers and printers for students to complete their assignments/ case studies/to do research at 70% of the sites.	Brooklyn City College Churchil Resource College Denver Technical College of SA Elangeni TVET (Ntuzuma) False Bay TVET (Westlake) Gauteng City College Lephalale TVET (Ellisras) Ogwini Comprehensive Technical High School Rock of Springs College (Brits) Taletso TVET (Mmabatho) The Automobile Association of SA Thekwini City College (Pietermaritzburg) Tshwane North TVET (Temba) Vhembe TVET (Techniven)
Human resources	At 65% of the sites visited, there was a process in place to identify training needs of staff members.	Central Johannesburg College (Alexandra) Churchil Resource College Denver Technical College of SA Esayidi TVET (Enyenyenzi) False Bay TVET (Westlake) Gauteng City College Lephalale TVET (Ellisras) Taletso TVET (Mmabatho) The Automobile Association of SA Thekwini City College (Pietermaritzburg) Umfolozi TVET (Esikhawini) Vhembe TVET (Techniven) Western TVET (Carletonville)
	At 70% of the sites visited, the college had a plan for training of staff/staff development.	Central Johannesburg College (Alexandra) Churchil Resource College Denver Technical College of SA Elangeni TVET (Ntuzuma) Esayidi TVET (Enyenyenzi) False Bay TVET (Westlake) Gauteng City College Lephalale TVET (Ellisras) Ogwini Comprehensive Technical High School Taletso TVET (Mmabatho) The Automobile Association of SA Thekwini City College (Pietermaritzburg) Vhembe TVET (Techniven) Western TVET (Carletonville)

Criterion	Findings	College/Site
	There was evidence that the training plan had been implemented at 55% of the sites visited.	Brooklyn City College Central Johannesburg College (Alexandra) Denver Technical College of SA Elangeni TVET (Ntuzuma) False Bay TVET (Westlake) Gauteng City College Lephalale TVET (Ellisras) Taletso TVET (Mmabatho) The Automobile Association of SA Vhembe TVET (Techniven) Western TVET (Carletonville)
	The educators at 50% of the sites felt that there were areas where they needed further training.	Denver Technical College of SA Elangeni TVET (Ntuzuma) False Bay TVET (Westlake) Lephalale TVET (Ellisras) Ogwini Comprehensive Technical High School Taletso TVET (Mmabatho) The Automobile Association of SA Umfoloji TVET (Esikhawini) Vhembe TVET (Techniven) Western TVET (Carletonville)
	The educators at 60% of the sites visited were exposed to the workplace environment/relevant industry.	Brooklyn City College Central Johannesburg College (Alexandra) Denver Technical College of SA Elangeni TVET (Ntuzuma) Esayidi TVET (Enyenyenzi) Gauteng City College Lephalale TVET (Ellisras) The Automobile Association of SA Thekwini City College (Pietermaritzburg) Tshwane North TVET (Temba) Umbilo Private Technical College Vhembe TVET (Techniven)
Internal assessment policies and systems	There was an up-to-date college assessment policy at 80% of the sites visited.	Brooklyn City College Central Johannesburg College (Alexandra) Churchil Resource College Denver Technical College of SA Elangeni TVET (Ntuzuma) Esayidi TVET (Enyenyenzi) False Bay TVET (Westlake) Gauteng City College Lephalale TVET (Ellisras) Northern Technical College Rock of Springs College (Brits) The Automobile Association of SA Thekwini City College (Pietermaritzburg) Umbilo Private Technical College Umfoloji TVET (Esikhawini) Vhembe TVET (Techniven)

Criterion	Findings	College/Site
	There was evidence of a strategy/plan for the monitoring of assessment at the site of learning at 75% of the sites visited.	Brooklyn City College Central Johannesburg College (Alexandra) Churchil Resource College Denver Technical College of SA Esayidi TVET (Enyenyenzi) False Bay TVET (Westlake) Gauteng City College Lephalale TVET (Ellisras) Northern Technical College Rock of Springs College (Brits) The Automobile Association of SA Thekwini City College (Pietermaritzburg) Umfoloji TVET (Esikhawini) Vhembe TVET (Techniven) Western TVET (Carletonville)
	There was an instructional offering monitoring report per lecturer at 55% of the sites visited.	Brooklyn City College Denver Technical College of SA Elangeni TVET (Ntuzuma) False Bay TVET (Westlake) Gauteng City College Northern Technical College The Automobile Association of SA Thekwini City College (Pietermaritzburg) Umfoloji TVET (Esikhawini) Vhembe TVET (Techniven) Western TVET (Carletonville)
	At 65% of the sites visited, there was a plan in place for the development of the assessment tasks, a significant decrease from 87% in August 2020.	Brooklyn City College Denver Technical College of SA Elangeni TVET (Ntuzuma) Esayidi TVET (Enyenyenzi) False Bay TVET (Westlake) Gauteng City College Lephalale TVET (Ellisras) Ogwini Comprehensive Technical High School Rock of Springs College (Brits) The Automobile Association of SA Tshwane North TVET (Temba) Vhembe TVET (Techniven) Western TVET (Carletonville)
	The tasks were developed according to the plan/schedule of assessment at 45% of the sites, a significant decline from 73% in August 2020.	Brooklyn City College Denver Technical College of SA Esayidi TVET (Enyenyenzi) Gauteng City College Lephalale TVET (Ellisras) The Automobile Association of SA Tshwane North TVET (Temba) Vhembe TVET (Techniven) Western TVET (Carletonville)

Criterion	Findings	College/Site
	At 65% of the sites (73% in August 2020), there were systems in place to ensure that tasks were of an acceptable standard.	Brooklyn City College Central Johannesburg College (Alexandra) Denver Technical College of SA Elangeni TVET (Ntuzuma) Esayidi TVET (Enyenyenzi) False Bay TVET (Westlake) Gauteng City College Lephalale TVET (Ellisras) Rock of Springs College (Brits) The Automobile Association of SA Tshwane North TVET (Temba) Vhembe TVET (Techniven) Western TVET (Carletonville)
	At 40% of the sites visited, the college kept an irregularity register.	Brooklyn City College Denver Technical College of SA False Bay TVET (Westlake) Lephalale TVET (Ellisras) Ogwini Comprehensive Technical High School The Automobile Association of SA Umbilo Private Technical College Vhembe TVET (Techniven)
	Internal assessment irregularities were recorded in the irregularity register at 25% of the sites visited.	Brooklyn City College Denver Technical College of SA False Bay TVET (Westlake) The Automobile Association of SA Vhembe TVET (Techniven)
Lecturer files	Thirty-five percent of the sites visited had lecturer files that contained the required information and documents, namely: <ul style="list-style-type: none"> a. Name; b. Certified copies of qualifications; c. SACE registration; d. Teaching/lecturing experience; and e. Workplace experience. 	Denver Technical College of SA Elangeni TVET (Ntuzuma) False Bay TVET (Westlake) Northern Technical College The Automobile Association of SA Tshwane North TVET (Temba) Vhembe TVET (Techniven)

Criterion	Findings	College/Site
	At 80% of the sites visited, lecturer files contained the instructional offering syllabus.	Brooklyn City College Central Johannesburg College (Alexandra) Denver Technical College of SA Elangeni TVET (Ntuzuma) Esayidi TVET (Enyenyenzi) False Bay TVET (Westlake) Gauteng City College Lephalale TVET (Ellisras) Northern Technical College Ogwini Comprehensive Technical High School The Automobile Association of SA Thekwini City College (Pietermaritzburg) Tshwane North TVET (Temba) Umfolozi TVET (Esikhawini) Vhembe TVET (Techniven) Western TVET (Carletonville)
	Subject files contained lesson plans at 85% of the sites visited.	Brooklyn City College Central Johannesburg College (Alexandra) Denver Technical College of SA Elangeni TVET (Ntuzuma) Esayidi TVET (Enyenyenzi) False Bay TVET (Westlake) Gauteng City College Lephalale TVET (Ellisras) Northern Technical College Ogwini Comprehensive Technical High School Rock of Springs College (Brits) The Automobile Association of SA Thekwini City College (Pietermaritzburg) Tshwane North TVET (Temba) Umfolozi TVET (Esikhawini) Vhembe TVET (Techniven) Western TVET (Carletonville)
	The assessment file contained relevant documents at 80% of the sites visited namely: <ol style="list-style-type: none"> a. Assessment schedules; b. Assessment instruments and tools; c. Evidence of pre-assessment moderation; d. Evidence of post-assessment moderation; and e. Mark sheets for all groups. 	Brooklyn City College Central Johannesburg College (Alexandra) Denver Technical College of SA Elangeni TVET (Ntuzuma) Esayidi TVET (Enyenyenzi) False Bay TVET (Westlake) Gauteng City College Lephalale TVET (Ellisras) Northern Technical College Technical High School Rock of Springs College (Brits) The Automobile Association of SA Thekwini City College (Pietermaritzburg) Tshwane North TVET (Temba) Umfolozi TVET (Esikhawini) Vhembe TVET (Techniven) Western TVET (Carletonville)

Criterion	Findings	College/Site
	Assessment scores were recorded accurately on mark sheets at 75% of the sites visited.	Brooklyn City College Central Johannesburg College (Alexandra) Elangeni TVET (Ntuzuma) Esayidi TVET (Enyenyenzi) False Bay TVET (Westlake) Gauteng City College Lephallale TVET (Ellisras) Northern Technical College The Automobile Association of SA Thekwini City College (Pietermaritzburg) Tshwane North TVET (Tomba) Umbilo Private Technical College Umfolozi TVET (Esikhawini) Vhembe TVET (Techniven) Western TVET (Carletonville)
Content coverage	Copies of previous question papers or sections of previous question papers were used as assessment tasks (tests) at 74% of sites, compared to 53% in August 2020.	Central Johannesburg College (Alexandra) Denver Technical College of SA Elangeni TVET (Ntuzuma) Esayidi TVET (Enyenyenzi) False Bay TVET (Westlake) Lephallale TVET (Ellisras) Ogwini Comprehensive Technical High School The Automobile Association of SA Thekwini City College (Pietermaritzburg) Tshwane North TVET (Tomba) Umbilo Private Technical College Umfolozi TVET (Esikhawini) Vhembe TVET (Techniven) Western TVET (Carletonville)
	Eighty percent of sites (60% in August 2020) had ensured that a substantial amount of work was covered in both tests.	Brooklyn City College Central Johannesburg College (Alexandra) Churchil Resource College Denver Technical College of SA Elangeni TVET (Ntuzuma) Esayidi TVET (Enyenyenzi) False Bay TVET (Westlake) Gauteng City College Lephallale TVET (Ellisras) Northern Technical College The Automobile Association of SA Thekwini City College (Pietermaritzburg) Tshwane North TVET (Tomba) Umfolozi TVET (Esikhawini) Vhembe TVET (Techniven) Western TVET (Carletonville)

Criterion	Findings	College/Site
	<p>The weighting and spread of content of the topic(s) in both tests was appropriate at 85% (87% in August 2020) of the sites.</p>	<p>Brooklyn City College Central Johannesburg College (Alexandra) Churchil Resource College Denver Technical College of SA Elangeni TVET (Ntuzuma) Esayidi TVET (Enyenyenzi) False Bay TVET (Westlake) Gauteng City College Lephalale TVET (Ellisras) Northern Technical College Ogwini Comprehensive Technical High School The Automobile Association of SA Thekwini City College (Pietermaritzburg) Tshwane North TVET (Temba) Umfoloji TVET (Esikhawini) Vhembe TVET (Techniven) Western TVET (Carletonville)</p>
	<p>Question types were not in keeping with the stipulated content at two sites (10%).</p>	<p>Taletso TVET (Mmabatho) Umbilo Private Technical College</p>
<p>Cognitive demand and difficulty levels</p>	<p>At 80% of the sites, the two tasks varied in the level of difficulty, were pitched at the right level, and assessed a variety of knowledge and skills.</p>	<p>Brooklyn City College Central Johannesburg College (Alexandra) Churchil Resource College Denver Technical College of SA Elangeni TVET (Ntuzuma) Esayidi TVET (Enyenyenzi) False Bay TVET (Westlake) Gauteng City College Lephalale TVET (Ellisras) Northern Technical College The Automobile Association of SA Thekwini City College (Pietermaritzburg) Tshwane North TVET (Temba) Umfoloji TVET (Esikhawini) Vhembe TVET (Techniven) Western TVET (Carletonville)</p>

Criterion	Findings	College/Site
Internal moderation of task	Eighty-five percent (87% in August 2020) of the sites had evidence of moderation of marking of a minimum sample of 10% of the scripts for both tests.	Brooklyn City College Denver Technical College of SA Elangeni TVET (Ntuzuma) Esayidi TVET (Enyenyenzi) False Bay TVET (Westlake) Gauteng City College Lephalale TVET (Ellisras) Northern Technical College Ogwini Comprehensive Technical High School Rock of Springs College (Brits) The Automobile Association of SA Thekwini City College (Pietermaritzburg) Tshwane North TVET (Temba) Umbilo Private Technical College Umfoloji TVET (Esikhawini) Vhembe TVET (Techniven) Western TVET (Carletonville)
Internal moderation of task	At 85% of sites, compared to 73% in August 2020, the internally moderated sample from both tests included the full range of performance, i.e. high, average, and low scoring students.	Brooklyn City College Denver Technical College of SA Elangeni TVET (Ntuzuma) Esayidi TVET (Enyenyenzi) False Bay TVET (Westlake) Gauteng City College Lephalale TVET (Ellisras) Northern Technical College Ogwini Comprehensive Technical High School Rock of Springs College (Brits) The Automobile Association of SA Thekwini City College (Pietermaritzburg) Tshwane North TVET (Temba) Umbilo Private Technical College Umfoloji TVET (Esikhawini) Vhembe TVET (Techniven) Western TVET (Carletonville)
Technical aspects	<p>Eleven sites (55%) contained all the required information:</p> <ol style="list-style-type: none"> The name of the instructional offering; The level of instructional offering; Time allocation; Content covered; Number of test; and Date. <p>This was a decline of 5% from the August 2020 findings.</p>	Central Johannesburg College (Alexandra) Esayidi TVET (Enyenyenzi) False Bay TVET (Westlake) Gauteng City College Lephalale TVET (Ellisras) Northern Technical College The Automobile Association of SA Thekwini City College (Pietermaritzburg) Umfoloji TVET (Esikhawini) Vhembe TVET (Techniven)

Criterion	Findings	College/Site
	There were instructions to students on both tasks at 70% of sites visited.	Brooklyn City College Denver Technical College of SA Elangeni TVET (Ntuzuma) False Bay TVET (Westlake) Gauteng City College Lephalale TVET (Ellisras) Northern Technical College Ogwini Comprehensive Technical High School The Automobile Association of SA Thekwini City College (Pietermaritzburg) Tshwane North TVET (Temba) Umfolozi TVET (Esikhawini) Vhembe TVET (Techniven) Western TVET (Carletonville)
	The language and terminology used was appropriate and relevant in both tests at all but two sites (10%). This was a decline of 10% from the August 2020 findings.	Taletso TVET (Mmabatho) Umbilo Private Technical College
	The mark allocation was clearly indicated for each question in both tests at 85% of the sites, compared to 87% in August 2020.	Brooklyn City College Central Johannesburg College (Alexandra) Churchil Resource College Denver Technical College of SA Elangeni TVET (Ntuzuma) Esayidi TVET (Enyenyenzi) False Bay TVET (Westlake) Gauteng City College Lephalale TVET (Ellisras) Northern Technical College Ogwini Comprehensive Technical High School The Automobile Association of SA Thekwini City College (Pietermaritzburg) Tshwane North TVET (Temba) Umfolozi TVET (Esikhawini) Vhembe TVET (Techniven) Western TVET (Carletonville)

Criterion	Findings	College/Site
	The mark allocation on the test corresponded to that on the marking tool for both tests at 90% of the sites, an improvement from 73% in August 2020.	Brooklyn City College Central Johannesburg College (Alexandra) Churchil Resource College Denver Technical College of SA Elangeni TVET (Ntuzuma) Esayidi TVET (Enyenyenzi) False Bay TVET (Westlake) Gauteng City College Lephalale TVET (Ellisras) Northern Technical College Ogwini Comprehensive Technical High School Rock of Springs College (Brits) The Automobile Association of SA Thekwini City College (Pietermaritzburg) Tshwane North TVET (Tomba) Umfoloji TVET (Esikhawini) Vhembe TVET (Techniven) Western TVET (Carletonville)
	At 15% of the sites, numbering in the test was incorrect.	Central Johannesburg College (Alexandra) Taletso TVET (Mmabatho) Umbilo Private Technical College
	The time allocation for the administration of the tests at 75% of the sites was realistic, compared to 80% of sites that complied in August 2020.	Brooklyn City College Churchil Resource College Denver Technical College of SA False Bay TVET (Westlake) Gauteng City College Lephalale TVET (Ellisras) Northern Technical College Ogwini Comprehensive Technical High School Rock of Springs College (Brits) The Automobile Association of SA Thekwini City College (Pietermaritzburg) Tshwane North TVET (Tomba) Umfoloji TVET (Esikhawini) Vhembe TVET (Techniven) Western TVET (Carletonville)
Marking tools	The marking guideline tool used at 70% of sites facilitated marking and was easy to use, compared to 60% in August 2020.	Brooklyn City College Central Johannesburg College (Alexandra) Denver Technical College of SA Elangeni TVET (Ntuzuma) Esayidi TVET (Enyenyenzi) False Bay TVET (Westlake) Gauteng City College Lephalale TVET (Ellisras) Northern Technical College Ogwini Comprehensive Technical High School The Automobile Association of SA Thekwini City College (Pietermaritzburg) Tshwane North TVET (Tomba) Vhembe TVET (Techniven)

Criterion	Findings	College/Site
Student performance	Students interpreted questions correctly and were able to answer all or most of the questions in the tests at 75% of sites, compared to 67% of the sites in August 2020.	Central Johannesburg College (Alexandra) Denver Technical College of SA Elangeni TVET (Ntuzuma) Esayidi TVET (Enyenyezi) False Bay TVET (Westlake) Gauteng City College Lephalale TVET (Ellisras) Northern Technical College Ogwini Comprehensive Technical High School The Automobile Association of SA Thekwini City College (Pietermaritzburg) Tshwane North TVET (Temba) Umbilo Private Technical College Vhembe TVET (Techniven) Western TVET (Carletonville)
Quality of marking	Marking was consistent with the marking guidelines at 70% of the sites, a decline from 80% of sites visited in August 2020.	Brooklyn City College Central Johannesburg College (Alexandra) Denver Technical College of SA Elangeni TVET (Ntuzuma) Esayidi TVET (Enyenyezi) False Bay TVET (Westlake) Gauteng City College Lephalale TVET (Ellisras) Northern Technical College The Automobile Association of SA Thekwini City College (Pietermaritzburg) Tshwane North TVET (Temba) Umbilo Private Technical College Umfoloji TVET (Esikhawini) Vhembe TVET (Techniven)
	The marks allocated were a true reflection of students' performance in both tests at 80% of the sites, an improvement on 60% sites in August 2020.	Brooklyn City College Central Johannesburg College (Alexandra) Denver Technical College of SA Elangeni TVET (Ntuzuma) Esayidi TVET (Enyenyezi) False Bay TVET (Westlake) Gauteng City College Lephalale TVET (Ellisras) Northern Technical College Ogwini Comprehensive Technical High School The Automobile Association of SA Thekwini City College (Pietermaritzburg) Tshwane North TVET (Temba) Umbilo Private Technical College Vhembe TVET (Techniven) Western TVET (Carletonville)

Criterion	Findings	College/Site
	<p>The calculation and transfer of marks to the mark sheet was accurate at 90% of the sites, an improvement on 80% of sites visited in August 2020.</p>	<p>Brooklyn City College Central Johannesburg College (Alexandra) Denver Technical College of SA Elangeni TVET (Ntuzuma) Esayidi TVET (Enyenyenzi) False Bay TVET (Westlake) Gauteng City College Lephalale TVET (Ellisras) Northern Technical College Ogwini Comprehensive Technical High School Rock of Springs College (Brits) The Automobile Association of SA Thekwini City College (Pietermaritzburg) Tshwane North TVET (Temba) Umbilo Private Technical College Umfolozu TVET (Esikhawini) Vhembe TVET (Techniven) Western TVET (Carletonville)</p>
	<p>The quality and standard of marking was acceptable at 75% of the sites, a slight improvement on the 67% of sites visited in August 2020.</p>	<p>Brooklyn City College Central Johannesburg College (Alexandra) Denver Technical College of SA Elangeni TVET (Ntuzuma) Esayidi TVET (Enyenyenzi) False Bay TVET (Westlake) Gauteng City College Lephalale TVET (Ellisras) Northern Technical College Ogwini Comprehensive Technical High School The Automobile Association of SA Thekwini City College (Pietermaritzburg) Tshwane North TVET (Temba) Umbilo Private Technical College Vhembe TVET (Techniven)</p>

Criterion	Findings	College/Site
Internal moderation of marking	There was evidence that students' work had been moderated internally at 65% of the sites, a significant decline from 87% in August 2020.	Brooklyn City College Central Johannesburg College (Alexandra) Denver Technical College of SA Elangeni TVET (Ntuzuma) False Bay TVET (Westlake) Gauteng City College Northern Technical College The Automobile Association of SA Thekwini City College (Pietermaritzburg) Tshwane North TVET (Temba) Umbilo Private Technical College Umfoloji TVET (Esikhwini) Vhembe TVET (Techniven)
	The quality and standard of internal moderation was acceptable at 55% of sites, a slight improvement on 53% in August 2020.	Brooklyn City College Central Johannesburg College (Alexandra) Denver Technical College of SA Elangeni TVET (Ntuzuma) False Bay TVET (Westlake) Gauteng City College Northern Technical College The Automobile Association of SA Thekwini City College (Pietermaritzburg) Umbilo Private Technical College Vhembe TVET (Techniven)

2.3.14 Compliance check of additional instructional offerings

As indicated earlier in this report, the external moderators were requested to conduct a compliance check of documents pertaining to other instructional offerings at the sites visited. They found that there was agreement at 20% of the sites between numbers registered with the DHET for these instructional offerings and the numbers registered at the colleges.

Table 2C provides information on the enrolments of these additionally sampled instructional offerings at the sites involved in the spot-check moderation of NATED Report 190/191 ICASS during March 2021.

Table 2C: Additional instructional offerings moderated, including DHET enrolment numbers

No.	College/Campus	Mathematics N2	Engineering Science N2	Engineering Drawing N2	Building and Civil Technology N3	Industrial Electronics N2	Electrical Trade Theory N2	Mechanotechnology N3	Electrotechnology N2
1.	Brooklyn City College	17 (16)				13 (13)	14 (14)		
2.	Central Johannesburg College, Alexandra	155*				123*		42 (31)	
3.	Churchil Resource College	27**	29**			19**			
4.	Denver Technical College of SA	141 (146)	92 (95)		26 (34)				
5.	Elangeni TVET, Ntuzuma	11 (0)			24 (40)			44 (35)	
6.	Esayidi TVET, Enyenyenzi	26 (26)	22 (22)			22 (22)			
7.	False Bay TVET, Westlake	12 (11)				35 (35)	30 (30)		
8.	Gauteng City College	110 (109)	85 (83)			30 (30)			
9.	Lephalale TVET, Ellisras	92 (92)		103 (83)		35 (33)			
10.	Northern Technical College	68 (68)		36 (36)					33 (33)
11.	Ogwini Comprehensive Technical High School		15**			15**	14 (14)		
12.	Rock of Springs College, Brits	36**				15**	19**		
13.	Taletso TVET, Mmabatho	94 (95)				70 (70)	78 (78)		
14.	The Automobile Association of SA	20 (20)	19 (18)			20 (20)			
15.	Thekwini City College, Pietermaritzburg	34 (19)	27 (22)				13 (7)		
16.	Tshwane North TVET, Temba	122 (115)	102 (89)	73 (48)					
17.	Umbilo Private Technical College	195 (195)		60 (60)			145 (145)		
18.	Umfolozu TVET, Esikhawini	55 (28)		25 (19)	37 (30)				
19.	Vhembe TVET, Techniven				90 (90)	131 (131)		109 (109)	
20.	Western TVET, Carletonville	90 (83)	86 (86)				44 (40)		

The numbers in brackets indicate the enrolments at the college/campus as per mark sheet(s)

* The mark sheet for only one class was presented and checked.

** No mark sheet was provided by the college/campus.

The sites were requested to provide evidence of the marked tests and mark sheets for the additional instructional offerings. The level of compliance of sites with the ICASS requirements as stated in the 2021 DHET ICASS Instructions is listed in table 2D.

Table 2D: Evidence of one or both tests accompanied by the marksheet

TVET/FET College	Campus/Site	Instructional offerings	Test 1	Test 2	Mark sheet
Brooklyn City College	Pretoria	Electrical Trade Theory N2	✓	✓	✓
		Industrial Electronics N2	✓	✓	✓
		Mathematics N2	✓	✓	✓
Central Johannesburg College	Alexandra	Industrial Electronics N2	✓	✓*	✓*
		Mathematics N2	✓	✓	✓
		Mechanotechnology N3	✓	✓*	✓*
Churchil Resource College	Pretoria	Engineering Science N2	X	X	X
		Industrial Electronics N2	X	X	X
		Mathematics N2	X	X	X
Denver Technical College of SA	Pretoria	Building and Civil Technology N3	✓	✓	✓
		Engineering Science N2	✓	✓	✓
		Mathematics N2	✓	✓	✓
Elangeni TVET	Ntuzuma	Building and Civil Technology N3	✓	✓	✓
		Mathematics N2	X**	X**	X**
		Mechanotechnology N3	✓	✓	✓
Esayidi TVET	Enyenyenzi	Engineering Science N2	✓	✓	✓
		Industrial Electronics N2	✓	✓	✓
		Mathematics N2	✓	✓	✓
False Bay TVET	Westlake	Electrical Trade Theory N2	✓	✓	✓
		Mathematics N2	✓	✓	✓
		Industrial Electronics N2	✓	X****	X****
Gauteng City College	Johannesburg	Engineering Science N2	✓	✓	✓
		Industrial Electronics N2	✓	✓	✓
		Mathematics N2	✓	✓	✓
Lephalale TVET	Ellisras	Engineering Drawing N2	✓	✓	X
		Industrial Electronics N2	✓	✓	X
		Mathematics N2	✓	✓	X
Northern Technical College	Thohoyandou	Engineering Drawing N2	✓	✓	✓
		Industrial Electronics N2	✓	✓	✓
		Mathematics N2	✓	✓	✓
Ogwini Comprehensive Technical High School	Durban	Electrical Trade Theory N2	✓	X***	X
		Engineering Science N2	X***	X***	X
		Industrial Electronics N2	X***	X***	X
Rock of Springs College	Brits	Electrical Trade Theory N2	✓	X	X
		Industrial Electronics N2	✓	X	X
		Mathematics N2	✓	X	X

TVET/FET College	Campus/Site	Instructional offerings	Test 1	Test 2	Mark sheet
Taleitso TVET	Mmabatho	Electrical Trade Theory N2	X***	X***	X***
		Industrial Electronics N2	X***	X***	X***
		Mathematics N2	X***	X***	X***
The Automobile Association of SA	Johannesburg	Engineering Science N2	✓	✓	✓
		Industrial Electronics N2	✓	✓	✓
		Mathematics N2	✓	✓	✓
Thekwini City College	Pietermaritzburg	Electrical Trade Theory N2	✓	✓	✓
		Engineering Science N2	✓	✓	✓
		Mathematics N2	✓	✓	✓
Tshwane North TVET	Temba	Engineering Drawing N2	✓	X****	X
		Engineering Science N2	✓	X*	✓
		Mathematics N2	✓	X****	X
Umbilo Private Technical College	Durban	Electrical Trade Theory N2	✓	✓	✓
		Engineering Drawing N2	✓	X*	X***
		Mathematics N2	✓	X*	X***
Umfolozzi TVET	Esikhwini	Building and Civil Technology N3	✓	✓	✓
		Industrial Electronics N2	✓	✓	✓
		Mathematics N2	✓	✓	✓
Vhembe TVET	Techniven	Building and Civil Technology N3	✓	X***	X***
		Industrial Electronics N2	✓	X***	X***
		Mechanotechnology N3	✓	✓	✓
Western TVET	Carletonville	Electrical Trade Theory N2	✓	✓	✓
		Engineering Science N2	✓	✓	✓
		Mathematics N2	✓	✓	✓

* No evidence of test; college stated that the test was still to be conducted.

** Only distance learning.

*** No evidence available.

**** Tests were being marked at the time of the visit.

Some instructional offerings at certain sites reflected little or no compliance in terms of marked tests and mark sheets. Sites that experienced difficulties in complying with ICASS requirements as stated in the 2021 DHET ICASS Instructions are listed in Table 2E.

Table 2E: Sites that experienced challenges in terms of ICASS compliance

Evidence of additional instructional offering	College	instructional offering
No evidence of tests or mark sheets	Churchil Resource College	Engineering Science N2
		Industrial Electronics N2
		Mathematics N2
	Ogwini Comprehensive Technical High School	Engineering Science N2
		Industrial Electronics N2
		Electrical Trade Theory N2
	*Taletso TVET, Mmabatho	Industrial Electronics N2
		Mathematics N2
		Mathematics N2

*This centre cancelled the April 2021 examinations as very little teaching or learning had taken place because of student protest action.

2.4 Areas of Improvement

The following improvements were observed:

- The lecturer files contained the instructional offerings syllabuses at 80% of the sites visited;
- Eighty percent of the sites (60% in August 2020) ensured that a substantial amount of work was covered in both tests;
- The mark allocation in the test corresponded to that on the marking tool for both tests at 90% of the sites (73% in August 2020);
- The students interpreted questions correctly and were able to answer all or most of the questions in the tests at 75% of the sites, compared to 67% of the sites in August 2020;
- The marking guideline tool facilitated marking/was easy to use at 70% of sites, compared to 60% in August 2020;
- The marks allocated were a true reflection of students' performance in both tests at 80% of the sites, compared to 60% in August 2020;
- The calculation and transfer of marks to mark sheets was accurate at 90% of the sites (80% in August 2020); and
- The quality and standard of marking was acceptable at 75% of the sites, a slight improvement on 67% of sites visited in August 2020.

2.5 Areas of Non-compliance

There were some concerns raised, including:

- There was a plan in place for the development of the assessment tasks at 65% of the sites, compared to 87% in August 2020;
- The tasks were developed according to a plan/schedule of assessment at 45% of the sites, compared to 73% in August 2020;
- At 65% of the sites (73% in August 2020), there were systems in place to ensure that tasks were of an acceptable standard;
- Copies of previous question papers or sections from previous question papers were used as assessment tasks (tests) at 74% of the sites, compared to 53% in August 2020;
- The time allocation for the administration of the tests was realistic at 75% of the sites, compared to 80% of sites in August 2020;

- f. Marking was consistent with the marking guidelines at 70% of the sites (80% in August 2020); and
- g. There was evidence that students' work had been moderated internally at 65% of the sites, a considerable decline from 87% of sites in August 2020.

2.6 Directives for Compliance and Improvement

The DHET is requested to address the following directives for compliance and improvement to ensure effective teaching, learning and assessment of the Engineering Studies' instructional offerings at colleges by ensuring that:

- a. There are systems in place to ensure that tasks are of an acceptable standard;
- b. Marking is consistent with the marking guidelines;
- c. Internal moderation of students' work is conducted thoroughly;
- d. All centres can provide evidence of internal assessment in compliance with ICASS requirements;
and
- e. The results of colleges where no evidence of test and mark sheets were found, are blocked.

2.7 Conclusion

The NATED Report 190/191 programme remains a popular choice amongst students at private FET colleges. Besides gaining knowledge of the theory of the instructional offerings, the practical application of the theoretical components prepares students for the industry. Internal assessment serves as preparation of students for the final examination at the end of the trimester. The continuous internal assessments should therefore contribute to the holistic development of the student for the workplace/further studies.

CHAPTER 3 MONITORING OF THE WRITING OF EXAMINATIONS

3.1 Introduction

Umalusi monitors the writing of examinations with the purpose of determining whether the Department of Higher Education and Training (DHET) conducts, administers and manages the examinations in accordance with approved guidelines and policies. This is done to ensure the credibility of the examinations for the Technical and Vocational Education and Training (TVET) qualifications and programmes registered on the General and Further Education and Training Sub-framework (GFETQSF).

This chapter reports on the findings of the monitoring of a sample of 37 examination centres. It acknowledges areas of improvement, indicates areas of non-compliance and issues directives for improvement and compliance.

3.2 Scope and Approach

The sample of 37 examination centres that was monitored included campuses from nine provinces. The Umalusi monitors and staff collected data from these sites using verification, observation and interview methods. Reports were then written, based on these data collected from monitored examination centres. The details of examination centres that were monitored are provided in Table 3A.

Table 3A: Examination centres monitored

No.	Name of College and Type	Site/Campus	Province	Instructional Offering	Date Visited
1.	Bhekubanzi Business Enterprise Private	KwaDlangezwa	KwaZulu-Natal (KZN)	Engineering Science N2	08/04/2021
2.	Bristol Training Centre Private	Pretoria	Gauteng (GP)	Engineering Science N3	07/04/2021
3.	Brooklyn City Centre Private	Pretoria	Gauteng (GP)	Engineering Science N3	07/04/2021
4.	Buffalo City TVET College Public	Saint Marks	Eastern Cape (EC)	Mathematics N3	08/04/2021
5.	Crane International Academy Private	Witbank	Mpumalanga (MP)	Engineering Science N3	07/04/2021
6.	Cresta Vaal College Private	Vereeniging	Gauteng (GP)	Supervision in Industry N3	20/04/2021
7.	Damelin Pretoria City Private	Pretoria	Gauteng (GP)	Mathematics N3	20/04/2021
8.	East Cape Midlands TVET College Public	Park Avenue	Eastern Cape (EC)	Engineering Science N2	08/04/2021

No.	Name of College and Type	Site/Campus	Province	Instructional Offering	Date Visited
9.	False Bay TVET College Public	Westlake	Western Cape (WC)	Engineering Science N2	08/04/2021
10.	Flavius Mareka TVET College Public	Mphohadi	Free State (FS)	Industrial Electronics N2	06/04/2021
11.	Gateway City College Private	Durban	KwaZulu-Natal (KZN)	Electrical Trade Theory N2	15/04/2021
12.	Gauteng City College Private	Pretoria	Gauteng (GP)	Engineering Science N2	08/04/2021
13.	Global Technical College Private	Rustenburg	North West (NW)	Mathematics N3	08/04/2021
14.	Greenview Training and Development Skills Centre Private	Johannesburg	Gauteng (GP)	Supervision in Industry N3	20/04/2021
15.	Ingwe TVET College Public	Mount Frere	Eastern Cape (EC)	Motor Trade Theory N2	16/04/2021
16.	Jengrac Technical College Private	Welkom	Free State (FS)	Engineering Science N2	08/04/2021
17.	Jeppe College Private	Johannesburg	Gauteng (GP)	Mathematics N3	08/04/2021
18.	Kingsway College of Computer and Business Studies Private	Cape Town	Western Cape (WC)	Mathematics N3	08/04/2021
19.	Kroonstad Correctional Services	Kroonstad	Free State (FS)	Electrical Trade Theory N2	15/04/2021
20.	Madzahisi College Private	Malamulele	Limpopo (LP)	Engineering Science N2	08/04/2021
21.	Maximum Leeuwkop Correctional Services	Bryanston	Gauteng (GP)	Engineering Science N2	08/04/2021
22.	MJR Training Institute Private	Westonaria	Gauteng (GP)	Supervision in Industry N3	20/04/2021
23.	National Skills and Technical College Private	Middelburg	Mpumalanga (MP)	Engineering Science N2	08/04/2021
24.	Northern Cape Rural TVET College Public	Upington	Northern Cape (NC)	Engineering Science N2	08/04/2021
25.	Platinum TVET College Public	Rustenburg	North West (NW)	Engineering Science N2	08/04/2021
26.	Polokwane Technology Institute Private	Polokwane	Limpopo (LP)	Engineering Science N3	07/04/2021
27.	Pretoria Technical College Private	Secunda	Mpumalanga (MP)	Engineering Science N2	08/04/2021

No.	Name of College and Type	Site/Campus	Province	Instructional Offering	Date Visited
28.	Princeview College Private	Durban	KwaZulu-Natal (KZN)	Engineering Science N2	08/04/2021
29.	Revine Technical College Private	White River	Mpumalanga (MP)	Mathematics N3	08/04/2021
30.	Roseville College Private	Rustenburg	North West (NW)	Electrical Trade Theory N2	15/04/2021
31.	Rostec Technical College Private	Polokwane	Limpopo (LP)	Engineering Science N2	08/04/2021
32.	Saint Ignatius Private	Witbank	Mpumalanga (MP)	Mechanotechnology N3	12/04/2021
33.	Sakhikamva College Private	Mthatha	Eastern Cape (EC)	Electrotechnology N3	21/04/2021
34.	Thekwini City College Private	Durban	KwaZulu-Natal (KZN)	Electrotechnology N3	21/04/2021
35.	Thibela Technical College Private	Witbank	Mpumalanga (MP)	Mechanotechnology N3	12/04/2021
36.	Tshwane City College Private	Pretoria	Gauteng (GP)	Mathematics N3	08/04/2021
37.	Westrand Graduate Institute of Training and Engineering Private	Randfontein	Gauteng (GP)	Supervision in Industry N3	20/04/2021

3.3 Summary of Findings

The findings are indicated below, by criteria, as per Umalusi's monitoring of the writing of the examinations instrument.

Table 3B reflects the overall findings on levels of compliance at the 37 sampled examination centres monitored by Umalusi monitors and staff.

Table 3B: Findings at Examination Centres monitored

Criteria	Findings	Examination Centres
Preparation for the examination	It was evident that the DHET had verified the state of readiness and availability of facilities at 30 (81%) of the examination centres visited; this was the same proportion as in the August 2020 examinations.	
	Seven (19%) of the examination centres had not been verified by the DHET.	Bristol Training Centre Crane International Academy Madzahisi College Park Avenue Pretoria Technical College Princeview College Thibela Technical College
	There was an official timetable for the current examinations at 37 examination centres monitored (100%).	All examination centres monitored.
	All candidates at 37 (100%) of the examination centres monitored were registered to write the examination.	All examination centres monitored.
	At 34 (92%) of the examination centres monitored, there were enough rooms/venues to accommodate all candidates.	
	There were not enough rooms/venues to accommodate all candidates at three (8%) of the examination centres monitored.	Bristol Training Centre National Skills and Technical College Saint Ignatius
	Thirty-two examination centres monitored (86%) had sufficient space in the examination room to accommodate all the candidates when seated 1.5 metres apart.	
	Five (14%) of the examination centres monitored had insufficient space in the examination room to accommodate all the candidates when seated 1.5 metres apart.	Brooklyn City Centre Global Technical College National Skills and Technical College Saint Ignatius Thibela Technical College
	All 37 examination centres monitored (100%) had furniture that was suitable for the instructional offerings being written.	All examination centres monitored.
	There were enough desks to accommodate all candidates at 37 examination centres monitored (100%).	All examination centres monitored.
	There was good lighting at 36 (97%) of the examination centres monitored.	
	One examination centre (3%) had very poor lighting.	Thibela Technical College
Thirty-seven examination centres (100%) monitored had water and ablution facilities.	All examination centres monitored.	

Criteria	Findings	Examination Centres
	Thirty-seven (100%) of the examination centres monitored had a safe or strongroom in which the examination material was kept.	All examination centres monitored.
	<p>The examination rooms at 36 (97%) of the examination centres monitored were suitable for the writing of examinations.</p> <p>The examination venues at one examination centre (3%) were not conducive to the writing of examinations, because of high noise levels.</p>	Jengrac Technical College
	<p>Chief invigilators collected/received the question papers at 34 examination centres (92%).</p> <p>At two examination centres (5%), the question papers were emailed to the chief invigilator.</p> <p>At one examination centre (3%), the question papers were collected from the surplus at other examination centres.</p>	<p>Jengrac Technical College Sakhikamva College</p> <p>Maximum Leeuwkop Correctional Services</p>
	<p>Thirty-six examination centres (97%) were in possession of dispatch documents.</p> <p>One examination centre (3%) had no dispatch documents.</p>	Maximum Leeuwkop Correctional Services
	<p>Thirty-three examination centres (89%) kept a stock control register.</p> <p>There was no stock register at four examination centres (11%).</p>	<p>Brooklyn City Centre Maximum Leeuwkop Correctional Services Rostec Technical College Saint Ignatius</p>
	<p>The chief invigilator verified that the question papers were sealed at 34 examination centres (92%).</p> <p>At three examination centres (8%), question papers were put in a sealed paper envelope brought by the examination officer to the examination room.</p>	<p>Jengrac Technical College Maximum Leeuwkop Correctional Services Sakhikamva College</p>

Criteria	Findings	Examination Centres
Invigilators and their training	The principal/campus manager was appointed as chief invigilator at 34 (92%) of the examination centres; an increase of 14% compared to 78% in the August 2020 examinations.	
	At three examination centres (8%) no evidence that the principal/campus manager had been appointed as chief invigilator could be provided and no delegation or appointment letter was available.	Bristol Training Centre Gauteng City College Thibela Technical College
	Chief invigilators received training from the assessment body at 34 examination centres (92%); this was an increase of 14% compared to 78% in the August 2020 examinations.	
	No evidence could be provided at three examination centres (8%) that the chief invigilator had been trained by the assessment body.	Bristol Training Centre Gauteng City College Thibela Technical College
	Invigilators at 35 examination centres (95%) were appointed in writing by the chief invigilator.	
	At two examination centres (5%) there was no evidence that the invigilators had been appointed by the chief invigilator.	Bristol Training Centre Damelin Pretoria City
	Invigilators received training for the current examination at 37 examination centres (100%).	All examination centres monitored.
Preparations for writing and examination rooms/venue(s)	Thirty-one examination centres (84%) admitted candidates at least 60 minutes before the commencement of the examination; an increase of 10% compared to 74% in the August 2020 examinations.	
	Candidates were admitted 30 minutes before the commencement of the examination at six examination centres (16%).	Jeppie College Kroonstad Correctional Services MJR Training Institute Saint Ignatius Tshwane City College Westrand Graduate Institute of Training and Engineering
	Candidates' admission letters/identity documents were verified at 37 of the examination centres monitored (100%) before they were allowed into the examination venue.	All examination centres monitored.

Criteria	Findings	Examination Centres
	<p>There were adequate numbers of invigilators at 36 examination centres (97%).</p> <p>There were too few invigilators at one examination centre (3%).</p>	Saint Ignatius
	<p>There was an invigilation timetable at 35 examination centres (95%); an increase of 2% compared to 93% in the August 2020 examinations.</p> <p>No invigilation timetable was available at two examination centres (5%).</p>	Bristol Training Centre Maximum Leeuwkop Correctional Services
	<p>A relief timetable was available at 32 examination centres (86%), an increase of 5% compared to 81% in the August 2020 examinations.</p> <p>There was no relief timetable at five examination centres (14%).</p>	Bristol Training Centre Crane International Academy Gauteng City College Maximum Leeuwkop Correctional Services Tshwane City College
	<p>An attendance register, signed by all invigilators, was kept at 34 examination centres (92%).</p> <p>No attendance register for invigilators was kept at three (8%) of the examination centres monitored.</p>	Bristol Training Centre Maximum Leeuwkop Correctional Services Tshwane City College
	<p>There was a seating plan and candidates were seated accordingly at 33 examination centres (89%); this was a decrease of 4% from 93% in the August 2020 examinations.</p> <p>Four examination centres (11%) did not have a seating plan and the candidates were seated randomly.</p>	Bhekubanzi Business Enterprise Crane International Academy Gauteng City College Jengrac Technical College
	<p>A clock or other device to display time was visible in examination venues at 35 examination centres (95%).</p> <p>At two examination centres (5%), there was no clock or other method of displaying the time in any examination room.</p>	Brooklyn City Centre Damelin Pretoria City

Criteria	Findings	Examination Centres
	An information board was visible at 36 examination centres (97%).	
	No information board was visible at one (3%) of the examination centres monitored.	Damelin Pretoria City
	The examination venue/s at 37 examination centres (100%) were free of any material/ writing/drawings that might have assisted candidates.	All monitored examination centres.
	Invigilators at 37 examination centres (100%) ensured that candidates were not in possession of cell phones or other material/ equipment not permitted in the examination room.	All monitored examination centres.
	Where applicable, calculators were checked for compliance at 31 examination centres (84%).	
	Calculators were not checked for compliance at six examination centres (16%).	Jengrac Technical College Jeppe College Maximum Leeuwkop Correctional Services National Skills and Technical College Princeview College Tshwane City College
Time management of activities during examinations	Invigilators arrived on time at 36 examination centres (97%), an increase of 19% on 78% in the August 2020 examinations.	
	At one examination centre (3%), invigilators did not arrive on time.	MJR Training Institute
	An attendance register was signed by candidates at 37 examination centres (100%).	All monitored examination centres.
	Candidates were issued with the official answer book at 37 examination centres (100%).	All monitored examination centres.
	At 33 examination centres (89%), invigilators verified the information on the cover page of the answer books.	
The invigilators did not verify information on the cover page of answer books at four examination centres (11%).	Gauteng City College Jengrac Technical College Kingsway College of Computer and Business Studies Madzahisi College	

Criteria	Findings	Examination Centres
	<p>The question papers were opened in front of the candidates at 34 examination centres (92%).</p> <p>The question papers were not opened in front of the candidates at three examination centres (8%).</p>	<p>Jengrac Technical College Maximum Leeuwkop Correctional Services Sakhikamva College</p>
	<p>Question papers were distributed to candidates on time at 27 examination centres (73%).</p> <p>At ten examination centres (27%) the question papers were not distributed to candidates on time.</p>	<p>Bristol Training Centre Crane International Academy Gauteng City College Jeppe College Maximum Leeuwkop Correctional Services MJR Training Institute National Skills and Technical College Revine Technical College Rostec Technical College Westrand Graduate Institute of Training and Engineering</p>
	<p>The question papers were checked for technical accuracy at 31 examination centres (84%), an increase of 6% when compared to 78% in the August 2020 examinations.</p> <p>Six (16%) of the examination centres did not check the question papers for technical accuracy.</p>	<p>Crane International Academy Gauteng City College Jeppe College Kingsway College of Computer and Business Studies MJR Training Institute Tshwane City College</p>

Criteria	Findings	Examination Centres
	<p>Candidates were given the stipulated reading time at 25 examination centres (68%).</p> <p>At twelve (32%) of the examination centres, candidates were not given the stipulated reading time.</p>	<p>Bristol Training Centre Crane International Academy Gauteng City College Jeppe College Kingsway College of Computer and Business Studies MJR Training Institute National Skills and Technical College Revine Technical College Rostec Technical College Saint Ignatius Tshwane City College Westrand Graduate Institute of Training and Engineering</p>
	<p>Examination rules were read to candidates at 33 examination centres (89%).</p> <p>The examination rules were not read to the candidates at four examination centres (11%).</p>	<p>Bristol Training Centre Gauteng City College Kingsway College of Computer and Business Studies Maximum Leeuwkop Correctional Services</p>
	<p>The examination started at the time indicated on the timetable at 33 examination centres (89%), a decline of 7% from 96% in the August 2020 examinations.</p> <p>At four examination centres (11%) the examination did not start at the time indicated on the timetable.</p>	<p>Bristol Training Centre Jeppe College Maximum Leeuwkop Correctional Services MJR Training Institute</p>
	<p>Answer books were stamped at 34 examination centres (92%).</p> <p>Answer books were not stamped at three examination centres (8%).</p>	<p>Jeppe College Kingsway College of Computer and Business Studies Kroonstad Correctional Services</p>

Criteria	Findings	Examination Centres
	<p>The examination ended at the stipulated time at 35 examination centres (95%).</p> <p>The examination ended after the stipulated time at two examination centres (5%).</p> <ol style="list-style-type: none"> Jeppe College: the examination session started 10 minutes late and ended 10 minutes late. Maximum Leeuwkop Correctional Services: question papers were distributed between 09:50 and 10:25 because of a shortage of papers. 	<p>Jeppe College (12:10)</p> <p>Maximum Leeuwkop Correctional Services (13:20)</p>
Activities during writing	No invigilators were requested by candidates to clarify any aspect of the question paper at any of the monitored examination centres.	All monitored examination centres.
	At 34 examination centres (92%) no candidates left the examination room temporarily without an escort; an increase of 7% when compared to 85% in the August 2020 examinations.	
	Candidates left the examination room temporarily without an escort at three examination centres (8%).	<p>Bhekubanzi Business Enterprise (13 candidates)</p> <p>Bristol Training Centre (1 candidate)</p> <p>Rostec Technical College (1 candidate)</p>
	There were no unauthorised personnel in any of the examination rooms during the examination session.	All monitored examination centres.
	Candidates were not allowed to leave the examination venue during the last 15 minutes of the session at 37 examination centres (100%).	All monitored examination centres.
	No irregularities were noted/reported during the current examination cycle by 36 examination centres (97%).	
	Irregularities were noted/reported in the current examination cycle at one examination centre (3%).	Bristol Training Centre
Invigilators were active and vigilant throughout the examination session at all examination centres.	All monitored examination centres.	

Criteria	Findings	Examination Centres
Packaging and transport of answer scripts	At 21 examination centres (57%) invigilators wore non-surgical gloves when collecting answer books.	
	Invigilators at 16 examination centres (43%) did not wear non-surgical gloves when collecting answer books.	Bristol Training Centre Brooklyn City Centre Crane International Academy Gateway City College Global Technical College Kingsway College of Computer and Business Studies Madzahisi College MJR Training Institute National Skills and Technical College Park Avenue Sakhikamva College Saint Ignatius Saint Marks Thibela Technical College Tshwane City College Westrand Graduate Institute of Training and Engineering
	Answer books were counted and packed in a secure area at 37 examination centres (100%), an increase of 15% when compared to 85% in the August 2020 examinations.	All monitored examination centres.
	Where candidates were absent, absentee forms were included in the specific batches of scripts concerned at 37 examination centres (100%).	All monitored examination centres.
	Only authorised personnel were present in the packing room at 37 examination centres (100%).	All monitored examination centres.
	The scripts were packaged in the sequence on the mark sheet at 37 examination centres (100%).	All monitored examination centres.
	The number of scripts corresponded to the number written on the wrapper at 37 examination centres (100%).	All monitored examination centres.
	Scripts were sealed in the official satchel at 35 examination centres (95%).	
	Scripts at two examination centres (5%) were not sealed in the official satchel provided by the assessment body.	Maximum Leeuwkop Correctional Services Madzahisi College
Scripts were sealed in the presence of the Umalusi monitor at 37 examination centres (100%).	All monitored examination centres.	

Criteria	Findings	Examination Centres
	<p>The chief invigilator completed a daily situational report at 32 examination centres (86%).</p> <p>There was no evidence that the chief invigilator had completed a daily situational report at five examination centres (14%).</p>	<p>Bristol Training Centre Crane International Academy Kroonstad Correctional Services Mount Frere Tshwane City College</p>
	<p>Scripts were transported to a nodal point or locked in a strong room by authorised personnel at 37 examination centres (100%).</p>	<p>All monitored examination centres.</p>
<p>Monitoring by the DHET</p>	<p>There was evidence of monitoring by the assessment body at 18 examination centres (49%), an increase of 19% compared to 30% in the August 2020 examinations.</p> <p>At 19 examination centres (51%), there was no evidence that the assessment body had monitored the centres during Umalusi's visit/s.</p>	<p>Bhekubanzi Business Enterprise Bristol Training Centre Brooklyn City Centre Crane International Academy Gauteng City College Global Technical College Jengrac Technical College Jeppe College Kroonstad Correctional Services Madzahisi College Maximum Leeuwkop Correctional Services MJR Training Institute Mount Frere National Skills and Technical College Park Avenue Pretoria Technical College Revine Technical College Rostec Technical College Rustenburg</p>
<p>Covid-19 compliance</p>	<p>Twenty-eight examination centres (76%) were fully Covid-19 compliant, a decrease of 13% when compared to 89% in the August 2020 examinations.</p> <p>Nine examination centres (24%) were not fully Covid-19 compliant.</p>	<p>Bhekubanzi Business Enterprise Bristol Training Centre Brooklyn City Centre Gauteng City College Kingsway College of Computer and Business Studies Revine Technical College Saint Ignatius Thibela Technical College Tshwane City College</p>

3.3.1 Irregularities Identified

The Umalusi monitors and staff noted the following irregularities at examination centres:

a. Bristol Training Centre:

- i. One candidate from outside the borders of South Africa used a passport number instead of the examination number generated by the DHET system.

b. Jengrac Technical College and Sakhikamva College:

- i. Question papers were emailed to the chief invigilators.

c. Maximum Leeuwkop Correctional Services:

- i. Question papers were requested from the surplus at other examination centres.
- ii. Delays in the distribution of question papers, which were handed out between 09:50 and 10:25, resulted in the examination session finishing at 13:20 instead of at 12:00.

d. Bhakubanzi Business Enterprise, Bristol Training Centre and Rostec Technical College:

- i. Candidate/s left the examination room temporarily without an escort.

3.4 Areas of Improvement

The following areas of compliance were observed:

- a. All candidates at all examination centres monitored were registered to write the examinations;
- b. Water and the ablution facilities were available at all examination centres monitored;
- c. All examination centres monitored had a safe or strongroom in which the examination material was kept;
- d. Invigilators received training for the current examination at all examination centres monitored;
- e. Invigilators at all monitored examination centres ensured that candidates were not in possession of cell phones or other material/equipment that was not required for the examination; and
- f. No unauthorised personnel were present in any of the examination rooms at any of the monitored examination centres during the examination session.

3.5 Areas of Non-compliance

During the writing phase of the April 2021 NATED Report 190/191 Engineering Studies N2–N3 examinations, Umalusi staff and monitors observed the following areas of non-compliance:

- a. Examination centres with insufficient rooms/venues to accommodate the candidates (seated at 1.5 metres apart);
- b. Examination venues that were not conducive to the writing of examinations because of high noise levels;
- c. Question papers emailed to the chief invigilator;
- d. Question papers collected from the surplus at other examination centres and used in the conduct of examinations;
- e. Examination centres conducting national examinations without invigilation or relief timetables;
- f. Failure to distribute question papers to the candidates on time;
- g. Candidates not being given the stipulated reading time;
- h. Examination answer books that were not stamped;
- i. Invigilators collecting examination answer books without wearing non-surgical gloves; and
- j. Examination centres that were not fully compliant with Covid-19 regulations.

3.6 Directives for Compliance and Improvement

The DHET is requested to ensure that:

- a. Examination centres have enough rooms/venues to accommodate candidates seated at 1.5 metres apart;
- b. Examination centres are quiet and conducive to writing examinations;
- c. Question papers are couriered/delivered to the chief invigilator, not sent by email, as the latter compromises the integrity of examination question papers and constitutes an irregularity;
- d. Question papers for all registered candidates are printed and packed according to the registration numbers of candidates to avoid centres having to ask for surplus question papers from other centres;
- e. The invigilation and relief timetables of all the examination centres are always available, displayed and kept in the examination file;
- f. Question papers are distributed to the candidates on time;
- g. Candidates are allowed the official reading time before the commencement of the writing of the examination;
- h. Examination answer books are stamped to prove their authenticity;
- i. Invigilators collecting examination answer books are provided with non-surgical gloves as per the DHET instructions for the conduct and administration of examinations amid Covid-19; and
- j. Examination centres are fully compliant with Covid-19 regulations.

3.7 Conclusion

The conduct, administration and management of the April 2021 NATED Report 190/191: Engineering Studies N2–N3 examinations were of an acceptable standard. Although infractions were observed at some examination centres, these did not compromise the overall integrity and credibility of the examinations. All stakeholders contributed to the credibility of the examination process.

CHAPTER 4 MONITORING OF THE MARKING CENTRES

4.1 Introduction

To comply with the quality assurance of assessment mandate, Umalusi monitored eight marking centres for the April 2021 examinations of NATED Report 190/191: Engineering Studies N2–N3. This was done to establish whether the required systems and processes were in place to ensure the integrity and credibility of the marking processes.

The Department of Higher Education and Training (DHET) provided Umalusi with the following:

- Registration data indicating the number of candidates enrolled for the various instructional offerings;
- The location of marking centres, including the physical addresses; and
- The dates for marking

4.2 Scope and Approach

The marking of the April 2021 NATED Report 190/191: Engineering Studies N2–N3 was conducted at eight marking centres across seven provinces. Umalusi sent out monitors and staff members to monitor marking centres used by the DHET.

Data used to compile this report were collected from on-site monitoring of the marking centres, interviews and observations by Umalusi monitors and staff, using an instrument designed for this purpose. The details of the monitored marking centres are provided in Tables 4A and 4B.

Table 4A: Marking centres monitored by Umalusi monitors

No.	Centre	Province	Level	Date
1.	Hillside View Campus	Free State (FS)	N2 and N3	29 April 2021
2.	Struandale Campus	Eastern Cape (EC)	N2 and N3	30 April 2021

Table 4B: Marking centres monitored by Umalusi staff members

No.	Centre	Province	Level	Date
3.	Centurion Campus	Gauteng (GP)	N2 and N3	26 April 2021
4.	Seshego Campus	Limpopo (LP)	N2 and N3	28 April 2021
5.	Pretoria West Campus	Gauteng (GP)	N2 and N3	29 April 2021
6.	Northdale Campus	KwaZulu-Natal (KZN)	N2 and N3	30 April 2021
7.	Mpondozankomo Campus	Mpumalanga (MP)	N2 and N3	30 April 2021
8.	Thornton Campus	Western Cape (WC)	N2 and N3	30 April 2021

4.3 Summary of Findings

The findings below are presented according to the criteria used for the monitoring of marking centres as prescribed by Umalusi.

4.3.1 Preparation and Planning for Marking

All marking centres had a marking centre management plan. Marking personnel arrived according to plan at all marking centres and marking commenced on 25 April 2021 as scheduled. Comprehensive lists of all chief markers, internal moderators, markers and examination assistants were available at all centres.

The training of marking personnel was conducted as per the DHET's management plans at all the marking centres visited.

Marking guidelines were received on time at all the marking centres, apart from the marking guideline for Engineering Science N2 (with an incorrect answer to question 5.4) that was sent to Pretoria West and Seshego marking centres. This error was rectified by issuing an erratum on 28 April 2021.

4.3.2 Marking Centre Resources

All marking centres were equipped with excellent infrastructure. The required furniture was available at all marking centres. There were communication facilities such as Wi-Fi and telephone except at Mpondozankomo marking centre, where there was no landline telephone and the marking centre management had to use their personal cell phones. No accommodation was provided for marking personnel at any of the marking centres.

Marking at all marking centres commenced between 07:00 and 08:00 in the morning and ended between 17:00 and 20:00 daily. All marking centres complied fully with the Occupational Health and Safety (OHS) requirements and regulations.

4.3.3 Security Measures

Security was provided by controlling access at the gates and entrances to the marking centres. Vehicle boot searches were conducted at the gates of most marking centres, except at Northdale marking centre where an Umalusi official entered the marking centre without being verified and the boot of the car was not searched as the security guard was asleep.

Scripts were transported from the nodal points to relevant marking centres by courier services. At the marking centres, the number of scripts was verified, and all the mark sheets were scanned.

It was the responsibility of the examination assistants to move scripts in and out of the marking venues, under the supervision of the deputy marking centre manager academic (DMCMA).

4.3.4 Management of Irregularities

The marking centre management team was trained to identify and manage irregularities. The managers discussed processes and procedures for dealing with irregularities with chief markers

and internal moderators during their training sessions. In turn, chief markers and internal moderators discussed these procedures with markers during their marking guideline discussions.

Irregularity committees had been appointed at all the marking centres monitored; these committees were made up of the marking centre management team and the chief marker and/or internal moderator of the respective instructional offerings.

The process of identifying and dealing with irregularities was standardised across all marking centres. Once a marker had identified an irregularity, he/she immediately discussed it with the chief marker. After the implicated script(s) had been internally moderated, the chief marker would evaluate whether this was a genuine irregularity. If there was substantial and convincing evidence, the matter was escalated to the marking centre manager and the irregularity committee. The irregularity committee would then forward a report together with all evidence to the DHET. The original script(s) and a copy of the mark sheet would be sent together with the report to the DHET, and a copy of the script(s) would be replaced in the batch. The irregularity would be recorded in the irregularity register.

4.3.5 Monitoring by the DHET

Five of the eight marking centres visited by Umalusi monitors and staff were monitored by the assessment body. The DHET officials verified the state of readiness of these marking centres, with the exception for three (Centurion, Pretoria West and Struandale) that had not been monitored by the DHET official/s at the time of Umalusi's visit.

4.3.6 Quality Assurance and Reports

At all marking centres visited by Umalusi monitors and staff, scripts were checked by examination assistants to ensure that marks had been correctly totalled, transferred to the front pages, and transferred to the mark sheets.

The system of capturing of marks at the marking centres was quality assured by a double-entry system, where one official captured, and another verified the entry.

Markers play a huge role in augmenting the information that the chief marker includes in the qualitative marking report. These reports by chief markers and internal moderators were quality assured by the deputy marking centre manager academic at most marking centres before being sent to the DHET; however, at Mpondozankomo marking centre, reports were not checked/quality assured by the deputy marking centre manager academic before they were sent to DHET.

4.3.7 Covid-19 Compliance

Five of the eight marking centres monitored complied fully with the Covid-19 regulations. All marking centres had convened a Covid-19 committee. Screening and temperature readings, and the recording of staff, marking personnel and visitors occurred at the entrance to each marking centre. Sanitisers were provided at all entrances to marking centres and marking venues. The staff and marking personnel wore masks or protective clothes at all times. Clear markings indicating social distancing rules were visible on entering the sites and the marking venues in compliance with social distancing protocols. The marking venues were cleaned/sanitised daily.

Three of the eight marking centres monitored did not comply fully with Covid-19 regulations;

a. Centurion marking centre:

- i. The marking personnel did not use non-surgical gloves when handling scripts.

b. Mpondozankomo marking centre:

- i. There were no screening forms;
- ii. There were no sanitisers; and
- iii. The marking personnel did not use non-surgical gloves when handling scripts.

c. Northdale marking centre:

- i. Markers were seated more closely together than the prescribed social distance in some marking venues.

4.4 Areas of good practice

The Umalusi monitors and staff noted the following areas of good practice:

- a. The marking venues were suitable for marking;
- b. Marking personnel arrived according to plan at all marking centres and marking commenced as scheduled;
- c. The training of marking personnel was conducted as per the DHET management plans at all the marking centres visited;
- d. All the marking centres had irregularity committees;
- e. Standard irregularity management procedures existed to deal with any irregularities; and
- f. All mark sheets were scanned upon receipt for security and control purposes and the movement of scripts was strictly monitored.

4.5 Areas of Non-compliance

The following areas of non-compliance were observed at some centres:

- a. Marking centre with inadequate communication facilities;
- b. No verification or searching of vehicle boots at the gate/entrance to the marking centre;
- c. Failure by deputy marking centre manager academic (DMCMA) to quality assure the chief marker and internal moderator marking reports; and
- d. Failure to comply with Covid-19 regulations.

4.6 Directives for compliance and improvement

DHET must ensure that:

- a. Marking centres are properly equipped with communication facilities;
- b. Marking centres have a list of at the gates/entrance of persons authorised to enter the marking centre; this should be used for verification. All cars/vehicles entering or exiting the marking centre should be searched;
- c. The chief markers and internal moderators' reports are quality assured before they are submitted to the DHET; and
- d. All centres comply fully with Covid-19 regulations.

4.7 Conclusion

The marking centres were well organised, and activities were conducted according to the marking management plan. Marking personnel fulfilled their duties in a professional manner. The monitoring visits confirmed that marking was conducted in a manner that ensured that the credibility and integrity of the April 2021 examinations for NATED Report 190/191: Engineering Studies N2–N3 were not compromised.

CHAPTER 5 STANDARDISATION OF MARKING GUIDELINES

5.1 Introduction

The standardisation of marking guidelines provides a platform for the Department of Higher Education and Training (DHET) markers, examiners, internal moderators and Umalusi external moderators to discuss responses per question and to reach consensus before the final marking guidelines are approved.

The purpose of standardising the marking guidelines is to ensure that personnel involved in the marking process share a common understanding and interpretation of the marking guidelines. Furthermore, this process aims to ensure that all possible alternative responses are included in the final marking guidelines before they are implemented. Umalusi participates in the finalisation of the marking guidelines to ensure that fairness prevails, and reports on the:

- a. Preparedness of markers, chief markers and internal moderators for the marking guideline discussions;
- b. Thoroughness of marking guideline discussions; and
- c. Standard and quality of the marking guidelines.

The standardisation of marking guidelines was conducted on online platforms to comply with the Covid-19 regulations. These meetings were chaired by the respective examiner or the internal moderator of setting of the question paper. All appointed officials were required to take part in the marking guideline discussions. In the case of large enrolments, only the chief markers and internal moderators from each marking centre were invited to join the meetings.

5.2 Scope and Approach

Eight external moderators from Umalusi joined the online marking guideline discussion meetings for a sample of N3 (three) and N2 (five) instructional offerings (as listed below).

Table 5A and 5B provide lists of the instructional offerings for which meetings were attended by Umalusi, and the dates.

Table 5A: N2 marking guideline discussions attended by external moderators

No.	Instructional offerings	Date
1.	Diesel Trade Theory N2	14 April 2021
2.	Engineering Drawing N2	22 April 2021
3.	Fitting and Machining Theory	14 April 2021
4.	Motor Trade Theory N2	19 April 2021
5.	Plumbing Theory N2	20 April 2021

Table 5B: N3 marking guideline discussions attended by external moderators

No.	Instructional offerings	Date
1.	Electrotechnology N3	22 April 2021
2.	Mathematics N3	14 April 2021
3.	Logic System N3	19 April 2021

The external moderators used an Umalusi instrument for the standardisation of N2 and N3 marking guidelines. This instrument enabled Umalusi moderators to report their findings based on the following criteria:

- a. Attendance by internal moderators and chief markers;
- b. Verification of question papers;
- c. Preparations for the standardisation of marking guidelines;
- d. Standardisation of marking guidelines process;
- e. Training at the standardisation of marking guideline meetings; and
- f. Approval of the final marking guidelines.

Umalusi moderators joined the standardisation of marking guideline meetings to monitor the proceedings, provide guidance where needed and to make final decisions.

5.3 Summary of Findings

The findings of the April 2021 NATED Report 190/191: Engineering Studies N2–N3 examinations marking guideline discussion meetings are summarised below.

a) Attendance

The panel for the marking guideline discussions for each question paper consisted of an examiner or internal moderator of the setting of the question paper who chaired the meetings. Attendance for Engineering Drawing N2, Fitting and Machining Theory N2 and Plumbing Theory N2 raised concerns: the marking personnel for these instructional offerings joined the meeting but left or joined again at a later stage. There were no directions from the DHET to ensure that everyone attended the whole online session for the marking guideline discussions as was required.

b) Submission of final marking guidelines

The chairpersons of the meetings made additions and changes to the marking guidelines during the discussions. Once these had been edited, the adjusted marking guidelines were submitted to the DHET to be stamped as the official marking guidelines and circulated to all marking centres.

c) Usefulness of the virtual marking guideline discussions

It was useful to have marking officials from all marking centres at the same meeting. The discussions were more robust than in previous examination sessions and uncertainties that arose at various marking centres were clarified and finalised at this meeting.

In addition, inconsistencies in marking across marking centres could be eliminated because of a generally better understanding of the marking guidelines by participants.

d) Status of marking guidelines and amendments

Further additions to marking guidelines were implemented. The purpose was to clarify and provide alternative answers or methods, as well as to include more possible answers. These amendments were aimed to promote consistency in marking and to accommodate a wider range of correct responses where possible.

Table 5D presents the findings of the standardisation of marking guidelines process as reported by the external moderators from Umalusi.

Table 5D: Findings of the standardisation of marking guidelines of NATED N2 and N3 instructional offerings

Evaluation criteria	Findings and challenges	Sampled instructional offerings involved
Appointment of marking staff	The chief markers, internal moderators and markers for one instructional offering (12%) were not appointed in good time.	Logic Systems N3
Attendance and punctuality of participants	The meeting for one instructional offering started after the scheduled time. No reason for the delay was given.	Logic Systems N3
	The meeting for one instructional offering started late because of technical and connectivity difficulties.	Diesel Trade Theory N2
	The marking officials at Mpondozankomo marking centre did not attend the meeting.	Fitting and Machining Theory N2
Recruitment process	Campus managers received circulars from the DHET to recruit marking personnel; these were circulated among all academic staff. The DHET appointed marking staff for the three marking cycles. Markers were informed of their appointments by email and short message service (SMS); others received appointment letters from their respective colleges.	All instructional offerings
Umalusi's changes to question paper and marking guideline during moderation process	The changes recommended by the Umalusi moderators were implemented in 88% of the question papers.	Building Science N3 Building and Civil Technology Bricklaying and Plastering N2 Electrical Trade Theory N2 Engineering Science N2 Fitting and Machining Theory N2 Instrument Trade Theory N2 Mathematics N2 Mechanotechnology N3 Plant Operation Theory Welder's Theory N2
	The question paper answered by the students and presented during the standardisation of marking guidelines had not been approved by the Umalusi external moderator. This led to the granting of a concession of seven marks to students.	Mathematics N3
Adjustments to the marking guidelines during the marking guideline discussions	Adjustments were made during the marking guideline discussions for 88% of the instructional offerings, compared to 75% in the August 2020 examinations.	

Evaluation criteria	Findings and challenges	Sampled instructional offerings involved
Justification for changes to the marking guidelines	Changes made to the marking guidelines for all instructional offerings were justified. These were clarifications and alternative responses to questions. This was also the case in the August 2020 examinations.	All instructional offerings
Effect of changes to marking guidelines on the cognitive level of the answers/responses	In all the marking guidelines (100%) for the sampled instructional offerings the changes made had no effect on the cognitive level of answers to the questions.	All instructional offerings
Signing off of the marking guidelines	Marking guidelines for all sampled instructional offerings (100%) were endorsed by all Umalusi moderators.	All instructional offerings
Comments and recommendations from Umalusi moderators	The professional and constructive approach to the discussions would allow markers to observe the same standards and improve the quality of marking.	All instructional offerings

5.4 Areas of improvement

The following areas of improvement were observed in the marking guideline discussion meetings:

- a. The attendance by examiners and internal moderators of question papers at the online marking guideline discussion meetings allowed for open discussion and would enhance the setting and marking processes; and
- b. The changes made to the marking guidelines for all the instructional offerings were justified. These comprised clarifications and additional alternative responses to the questions asked.

5.5 Areas of Non-compliance

The following examples of non-compliance were observed by the external moderators:

- a. Not all marking staff were present at the marking guideline discussion meetings;
- b. Umalusi was not given the names of participants who had been invited to the meetings; and
- c. The changes suggested by Umalusi moderators during the external moderation of the question papers and marking guidelines were not implemented in Mathematics N3.

5.6 Directives for Compliance and Improvement

The DHET must ensure that:

- a. All designated marking personnel attend the standardisation of marking guideline;
- b. Umalusi has the names of participants who will attend the standardisation of marking guideline meeting; and
- c. All changes made during the standardisation of marking guidelines are implemented in the instructional offerings concerned.

5.7 Conclusion

The DHET is commended for its preparations and improvements for the conduct of the marking guideline discussion meetings. The implementation of online platforms for the marking guideline meetings and the inclusion of examiners and internal moderators in the meeting proved to be beneficial. However, the DHET must devise a method to enforce attendance by all participants required to attend the marking guideline discussions.

CHAPTER 6 VERIFICATION OF MARKING

6.1 Introduction

Umalusi quality assures the conduct of the marking process to confirm the consistency and accuracy of marking, as well as to establish whether both marking and internal moderation are executed according to agreed and established practices and standards. It is through this process of moderation that the standard and quality of marking is verified and reported.

This chapter will report on:

- a. The reliability and viability of the systems, processes and procedures that were planned and implemented at the marking centres;
- b. The quality and standard of marking and internal moderation;
- c. The performance of students;
- d. Identification of areas of compliance and non-compliance; and
- e. Directives for compliance.

Umalusi quality assured the marking processes for the April 2021 NATED Report 190/191: Engineering Studies N2–N3 examinations by verifying the marking of a sample of instructional offerings. This verification of marking evaluated the adherence of marking to the approved standardised marking guidelines.

6.2 Scope and Approach

Umalusi sampled 12 instructional offerings from five marking centres for on-site monitoring and verification. This sample consisted of eight N2 and four N3 instructional offerings. Table 6A lists the distribution of instructional offerings across marking centres:

Table 6A Distribution of instructional offerings across marking centres

No.	Marking Centre	Number of Instructional offerings
1.	Ighayiya	1
2.	Mpondozankomo	1
3.	Northdale	1
4.	Pretoria West	8
5.	Thornton	1
TOTAL		12

Twelve moderators from Umalusi verified the standard and quality of marking as part of the verification process.

Table 6B lists the eight sampled N2 instructional offerings, the dates of verification and the marking centres at which on-site verification was conducted:

Table 6B: N2 instructional offerings sampled

No.	Instructional Offerings	Date	Marking Centre
1.	Bricklaying and Plastering Theory N2	29 April 2021	Pretoria West
2.	Electrical Trade Theory N2	29 April 2021	Pretoria West
3.	Engineering Science N2	29 April 2021	Pretoria West
4.	Fitting and Machining Theory N2	30 April 2021	Northdale
5.	Instrument Trade Theory N2	30 April 2021	Mpondozankomo
6.	Mathematics N2	29 April 2021	Iqhayiya
7.	Plant Operation Theory N2	29 April 2021	Pretoria West
8.	Welders' Theory N2	29 April 2021	Thornton

Table 6C lists the four sampled N3 instructional offerings, the dates of verification and the marking centres at which on-site verification was conducted:

Table 6C: N3 instructional offerings sampled

No.	Instructional Offerings	Date	Marking Centre
1.	Building Science N3	29 April 2021	Pretoria West
2.	Building and Civil Technology N3	29 April 2021	Pretoria West
3.	Mathematics N3	29 April 2021	Pretoria West
4.	Mechanotechnology N3	30 April 2021	Pretoria West

The April 2020 examination was cancelled because of the Covid-19 pandemic. Therefore, during the August 2020 examination Umalusi sampled 28 instructional offerings for the verification of the marking process. Although the sample for the April 2021 examination was small (12 instructional offerings), it was within the norm for sampling of instructional offerings in the previous verification of marking processes.

Table 6D and **Table 6E** indicate the number of instructional offerings, provinces and examination centres for N2 and N3 included in the sample, respectively:

Table 6D: Verification of marking N2: instructional offerings, number of provinces and number of examination centres per province

Instructional Offerings	No. of Provinces	Western Cape	Northern Cape	Free State	Eastern Cape	KwaZulu-Natal	Mpumalanga	Limpopo	Gauteng	North West	Province 10*
Bricklaying and Plastering Theory N2	6	3	0	1	0	0	3	0	3	2	1
Electrical Trade Theory N2	3	0	0	0	0	0	0	0	7	6	3
Engineering Science N2	3	0	0	0	0	0	0	0	4	3	1
Fitting and Machining Theory N2	1	0	0	0	0	17	0	0	0	0	0
Instrument Trade Theory N2	6	2	0	0	1	0	0	5	6	4	2
Mathematics N2	1	16	0	0	0	0	0	0	0	0	0
Plant Operation Theory N2	5	2	0	0	2	4	0	4	5	0	0
Welders' Theory N2	1	5	0	0	0	0	0	0	0	0	0

* Examination centres outside the borders of South Africa

Table 6E: Verification of marking N3: instructional offerings, number of provinces and number of examination centres per province

Instructional Offerings	No. of Provinces	Western Cape	Northern Cape	Free State	Eastern Cape	KwaZulu-Natal	Mpumalanga	Limpopo	Gauteng	North West	Province 10*
Building Science N3	6	0	0	0	2	5	4	2	3	0	1
Building and Civil Technology N3	7	1	0	1	1	1	1	0	1	1	0
Mathematics N3	3	0	0	0	0	0	0	0	5	2	1
Mechanotechnology N3	9	0	1	2	2	3	2	2	4	1	1

* Examination centres outside the borders of South Africa

6.3 Summary of Findings

This section presents the most important results and discusses and interprets the findings of the verification of marking for the April 2021 N2-N3 examinations. The April 2020 N2-N3 examinations were cancelled because of the Covid-19 pandemic. Findings are therefore compared to those of the August 2020 N2-N3 examinations.

Table 6F summarises the findings of the verification of marking of the eight N2 instructional offerings:

Table 6F: Findings of the verification of marking of N2 instructional offerings

Criteria	Findings	Instructional Offerings
Delivery of scripts	In eight (100%) of the instructional offerings sampled, the full complement of scripts had been received at the time of moderation, an improvement of 44% compared to the August 2020 examination.	Bricklaying and Plastering Theory N2 Electrical Trade Theory N2 Engineering Science N2 Fitting and Machining Theory N2 Instrument Trade Theory N2 Mathematics N2 Plant Operation Theory N2 Welders' Theory N2
Training for marking	Training for marking was conducted by 100% of the sampled instructional offerings, an increase of 19% from the August 2020 examination.	Bricklaying and Plastering Theory N2 Electrical Trade Theory N2 Engineering Science N2 Fitting and Machining Theory N2 Instrument Trade Theory N2 Mathematics N2 Plant Operation Theory N2 Welders' Theory N2

Criteria	Findings	Instructional Offerings
Sample marking	After training for marking by eight (100%) of the instructional offerings sampled, each marker marked a copy of the same script to determine consistency of marking. This was an improvement of 19% compared to the August 2020 examination.	Bricklaying and Plastering Theory N2 Electrical Trade Theory N2 Engineering Science N2 Fitting and Machining Theory N2 Instrument Trade Theory N2 Mathematics N2 Plant Operation Theory N2 Welders' Theory N2
	Thereafter, in six (75%) of the instructional offerings, markers received a sample of scripts to mark from a range of centres, a decline of 6% from the August 2020 examination.	Bricklaying and Plastering Theory N2 Electrical Trade Theory N2 Engineering Science N2 Mathematics N2 Plant Operation Theory N2 Welders' Theory N2
	Markers for the other two instructional offerings did not receive a sample of scripts from a range of centres.	Fitting and Machining Theory N2
	During sample marking, markers in seven (88%) of the sampled instructional offerings adhered to the marking guidelines.	Bricklaying and Plastering Theory N2
	Markers for one sampled instructional offering did not adhere to the marking guideline.	Mathematics N2
Marking: adherence to the marking guideline	Adherence to marking guidelines was considered good in five of the eight instructional offerings (63%), a decline of 31% from the August 2020 examination.	Bricklaying and Plastering Theory N2
	In the remaining three instructional offerings (37%), adherence to the marking guidelines was rated as average	Electrical Trade Theory N2
Standard of marking	The standard of marking was rated as good in six instructional offerings (75%). This was a decline of 25% from the August 2020 examination.	Bricklaying and Plastering Theory N2 Engineering Science N2 Instrument Trade Theory N2 Plant Operation Theory N2 Welders' Theory N2 Electrical Trade Theory N2

Criteria	Findings	Instructional Offerings
	The standard of marking was rated as average in the two remaining instructional offerings (25%).	Fitting and Machining Theory N2 Mathematics N2
Administration: recording of marks	The prescribed procedure for the recording of marks on the front page of the script was followed by all instructional offerings (100%), as in the August 2020 examination.	Bricklaying and Plastering Theory N2 Electrical Trade Theory N2 Engineering Science N2 Fitting and Machining Theory N2 Instrument Trade Theory N2 Mathematics N2 Plant Operation Theory N2 Welders' Theory N2
Administration: transfer of marks to the cover page	Marks were transferred correctly to the cover page in all (100%) of the sampled instructional offerings.	Bricklaying and Plastering Theory N2 Electrical Trade Theory N2 Engineering Science N2 Fitting and Machining Theory N2 Instrument Trade Theory N2 Mathematics N2 Plant Operation Theory N2 Welders' Theory N2
Administration: correct completion of mark sheets	Mark sheets were completed correctly in seven (88%) of the instructional offerings: <ul style="list-style-type: none"> a. No correction fluid was used; b. All marks were indicated as three digits; c. No blank spaces; d. IRR was indicated to left of candidate number; e. Initial and surname of examination assistant was included; and f. Signature of chief marker was included. 	Bricklaying and Plastering Theory N2 Electrical Trade Theory N2 Engineering Science N2 Instrument Trade Theory N2 Mathematics N2 Plant Operation Theory N2 Welders' Theory N2
Administration: note keeping	Notes were kept by markers throughout the marking process in all instructional offerings (100%), an improvement of 25% from the August 2020 examination.	Bricklaying and Plastering Theory N2 Electrical Trade Theory N2 Engineering Science N2 Fitting and Machining Theory N2 Instrument Trade Theory N2 Mathematics N2 Plant Operation Theory N2 Welders' Theory N2

Criteria	Findings	Instructional Offerings
Control: marker identification	In eight (100%) of the instructional offerings sampled, the markers indicated their code/ name in red ink on the cover page of the script.	Bricklaying and Plastering Theory N2 Electrical Trade Theory N2 Engineering Science N2 Fitting and Machining Theory N2 Instrument Trade Theory N2 Mathematics N2 Plant Operation Theory N2 Welders' Theory N2
Control: chief marker identification	All chief markers for the sampled instructional offerings wrote their names clearly on the moderated scripts. This was an improvement of 27% on the August 2020 examination.	Bricklaying and Plastering Theory N2 Electrical Trade Theory N2 Engineering Science N2 Fitting and Machining Theory N2 Instrument Trade Theory N2 Mathematics N2 Plant Operation Theory N2 Welders' Theory N2
Control: examination assistant identification	In five out of the eight instructional offerings (63%) sampled, the examination assistants did not write their initials/signatures clearly on the scripts checked.	Bricklaying and Plastering Theory N2 Electrical Trade Theory N2 Engineering Science N2 Fitting and Machining Theory N2 Welders' Theory N2
Internal moderation	In seven instructional offerings (88%), moderation of scripts throughout the marking process was evident, compared to 81% in the August 2020 examination.	Bricklaying and Plastering Theory N2 Electrical Trade Theory N2 Engineering Science N2 Fitting and Machining Theory N2 Instrument Trade Theory N2 Mathematics N2 Plant Operation Theory N2
	One sampled instructional offering (12%) was not internally moderated; the number of scripts was small, and no internal moderator had been appointed by the DHET.	Welders' Theory N2
Internal moderation: sampling of scripts	In seven instructional offerings moderated (100%), the moderators randomly sampled high, average and low performing candidate scripts for internal moderation.	Bricklaying and Plastering Theory N2 Electrical Trade Theory N2 Engineering Science N2 Fitting and Machining Theory N2 Instrument Trade Theory N2 Mathematics N2 Plant Operation Theory N2

Criteria	Findings	Instructional Offerings
Internal moderation approach	A whole script moderation approach was adopted in seven internally moderated instructional offerings (100%).	Bricklaying and Plastering Theory N2 Electrical Trade Theory N2 Engineering Science N2 Fitting and Machining Theory N2 Instrument Trade Theory N2 Mathematics N2 Plant Operation Theory N2
Standard of internal moderation	In six of the seven instructional offerings internally moderated (86%), the standard of internal moderation was rated as good.	Bricklaying and Plastering Theory N2 Electrical Trade Theory N2 Engineering Science N2 Instrument Trade Theory N2 Mathematics N2 Plant Operation Theory N2
	In one of the seven instructional offerings internally moderated (14%), the standard of internal moderation was rated as average.	Fitting and Machining Theory N2
Candidates' responses	Candidates found the papers for seven instructional offerings (88%) to be fair, an increase of 13% from the August 2020 examination.	Bricklaying and Plastering Theory N2 Electrical Trade Theory N2 Fitting and Machining Theory N2 Instrument Trade Theory N2 Mathematics N2 Plant Operation Theory N2 Welders' Theory N2
	In one instructional offering (12%), candidates found the paper difficult.	Engineering Science N2
Prevention and handling of irregularities	Irregularities were reported in four of the instructional offerings (50%) sampled, an increase of 12% when compared to irregularities in the August 2020 examination.	Bricklaying and Plastering Theory N2 Electrical Trade Theory N2 Engineering Science N2 Fitting and Machining Theory N2
General fairness of marking	Making was declared fair in six (75%) of the instructional offerings verified.	Bricklaying and Plastering Theory N2 Electrical Trade Theory N2 Fitting and Machining Theory N2 Instrument Trade Theory N2 Plant Operation Theory N2 Welders' Theory N2
	Marking was declared inconsistent and unfair in two (25%) of the instructional offerings verified.	Engineering Science N2 Mathematics N2

Table 6G summarises the findings of the verification of marking for the four N3 instructional offerings:

Table 6G: Findings of the verification of marking of N3 instructional offerings

Criteria	Findings	Instructional Offerings
Delivery of scripts	The full complement of scripts for two of the four instructional offerings sampled (50%) had been received at the time of moderation. This was a decline of 8% from the August 2020 examination.	Building Science N3 Building and Civil Technology N3
Training for marking	Training for marking was conducted for four (100%) of the sampled instructional offerings.	Building Science N3 Building and Civil Technology N3 Mathematics N3 Mechanotechnology N3
Sample marking	After training for marking for four (100%) of the instructional offerings sampled, each marker marked a copy of the same script to determine consistency in marking.	Building Science N3 Building and Civil Technology N3 Mathematics N3 Mechanotechnology N3
	Thereafter, in three (75%) of the instructional offerings, markers received a sample of scripts to mark from a range of centres, a decrease of 6% from the August 2020 examination.	Building Science N3 Mathematics N3 Mechanotechnology N3
	Markers did not receive a sample of scripts from a range of centres for the remaining instructional offering.	Building and Civil Technology N3
	During sample marking, markers adhered to the marking guideline for three of the four sampled instructional offerings (75%)	Building Science N3 Building and Civil Technology N3 Mechanotechnology N3
	Markers did not adhere to the marking guideline for one sampled instructional offering.	Mathematics N3

Marking: adherence to the marking guidelines	Adherence to marking guidelines was judged as good in two of the four instructional offerings (50%), a decline of 25% from the August 2020 examination.	Building Science N3 Building and Civil Technology N3
	Adherence to the marking guidelines was rated as average for the remaining two instructional offerings (50%).	Mathematics N3 Mechanotechnology N3
Criteria	Findings	Instructional Offerings
Standard of marking	The standard of marking in two instructional offerings (50%) was rated as good, a decrease of 58% from the August 2020 examination.	Building Science N3 Building and Civil Technology N3
	The standard of marking was rated as average in one instructional offering (25%)	Mechanotechnology N3
	The standard of marking was rated poor in one instructional offering (25%).	Mathematics N3
Administration: recording of marks	The prescribed procedure for the recording of marks on the front page of the script was followed by all instructional offerings (100%), as in the August 2020 examination.	Building Science N3 Building and Civil Technology N3 Mathematics N3 Mechanotechnology N3
Administration: mark indication per question	Marks were clearly indicated per question in all instructional offerings (100%).	Building Science N3 Building and Civil Technology N3 Mathematics N3 Mechanotechnology N3
Administration: indication of errors	The moderator and/or examination assistant highlighted errors clearly in all (100%) of the sampled instructional offerings.	Building Science N3 Building and Civil Technology N3 Mathematics N3 Mechanotechnology N3
Administration: transfer of marks to the cover page	Marks were transferred correctly to the cover page in all (100%) of the instructional offerings.	Building Science N3 Building and Civil Technology N3 Mathematics N3 Mechanotechnology N3

Administration: correct completion of mark sheets	Mark sheets were completed correctly in all (100%) of the instructional offerings according to the following criteria: <ul style="list-style-type: none"> a. No correction fluid was used; b. All marks were indicated as three digits; c. No blank spaces; d. IRR was indicated to left of candidate number; e. Initial and surname of examination assistant was included; and f. Signature of chief marker was included. 	Building Science N3 Building and Civil Technology N3 Mathematics N3 Mechanotechnology N3
Administration: note keeping	Notes were kept by markers throughout the process in all instructional offerings (100%), an improvement of 8% on the August 2020 examination.	Building Science N3 Building and Civil Technology N3 Mathematics N3 Mechanotechnology N3
Criteria	Findings	Instructional Offerings
Control: marker identification	In all four instructional offerings sampled (100%), the markers indicated their code/ name in red ink on the cover page of the script.	Building Science N3 Building and Civil Technology N3 Mathematics N3 Mechanotechnology N3
Control: chief marker identification	Three of the four chief markers of the instructional offerings sampled indicated their names clearly on the moderated scripts, a decline of 17% from the August 2020 examination.	Building Science N3 Building and Civil Technology N3 Mechanotechnology N3
Control: examination assistant identification	In three of the four instructional offerings sampled (75%), the examination assistants did not clearly indicate their initials/signatures on the checked scripts.	Building Science N3 Building and Civil Technology N3 Mechanotechnology N3
Internal moderation	Moderation of scripts throughout the marking process was evident in all four instructional offerings sampled.	Building Science N3 Building and Civil Technology N3 Mathematics N3 Mechanotechnology N3
Internal moderation: sampling of scripts	In three of the four instructional offerings moderated (75%), the moderators randomly sampled high, average and low performing candidate scripts for internal moderation.	Building Science N3 Building and Civil Technology N3 Mechanotechnology N3
Internal moderation approach	A whole script moderation approach was adopted by four internally moderated instructional offerings (100%).	Building Science N3 Building and Civil Technology N3 Mathematics N3 Mechanotechnology N3

Criteria	Findings	Instructional Offerings
Standard of internal moderation	In two of the four instructional offerings (50%), the standard of internal moderation was rated as good. This was a decrease of 42% from the August 2020 examination.	Building Science N3 Building and Civil Technology N3
	In one instructional offering (25%), the standard of internal moderation was rated as average.	Mechanotechnology N3
	In one instructional offering (25%), the standard of internal moderation was rated as poor.	Mathematics N3
Candidates' responses	Candidates in four instructional offerings (100%) found the paper to be fair. This was an increase of 8% from August 2020.	Building Science N3 Building and Civil Technology N3 Mathematics N3 Mechanotechnology N3
Prevention and handling of irregularities	Irregularities were reported by three of the four instructional offerings sampled (75%), an increase of 25% compared to the August 2020 examination.	Building Science N3 Mathematics N3 Mechanotechnology N3
General fairness of marking	Making was declared fair in all four (100%) of the instructional offerings verified.	Building Science N3 Building and Civil Technology N3 Mathematics N3 Mechanotechnology N3

6.4 Areas of Improvement

The findings of the verification of marking revealed the following areas of improvement when they were compared to the August 2020 N2–N3 examination findings:

- The full complement of N2 scripts had been received at the time of marking;
- Training for marking was conducted in all sampled N2 and N3 instructional offerings;
- Marks were transferred correctly to the cover page in all sampled N2 and N3 instructional offerings;
- Mark sheets were completed correctly in 88% of N2 and in 100% of N3 instructional offerings;
- Notes were kept by markers throughout the process in 100% of the sampled N2 and N3 instructional offerings; and
- Moderation of scripts throughout the marking process was evident in 88% of N2 and 100% of N3 instructional offerings sampled.

6.5 Areas of Non-compliance

The findings of the verification of marking revealed the following instances of non-compliance that might hinder the progress of future marking processes:

- a. Fifty percent of the complement of N3 scripts had not yet been received at the time of marking;
- b. Irregularities were reported by 50% of N2 and 75% of N3 instructional offerings;
- c. The standard of the marking and internal moderation of Mathematics N3 was poor; and
- d. The marking of Engineering Science N2 and Mathematics N2 was inconsistent and unfair.

6.6 Directives for Compliance and Improvement

To improve the standard and quality of marking the DHET is requested to:

- a. Revise current processes to ensure all scripts are received in good time by marking centres;
- b. Adopt more stringent measures during invigilation to curb irregularities during the writing of examinations; and
- c. Appoint stronger marking teams for Mathematics N3, Engineering Science N2 and Mathematics N2.

6.7 Conclusion

The marking and moderation of scripts for the April 2021 NATED Report 190/191: Engineering Studies N2–N3 examination was generally consistent and accurate. The administration and control of marking was of a high standard. Findings reflect that marking was fair in an average of 83% of the sampled instructional offerings. Results indicate that 92% of the candidates found the question papers of the sampled instructional offerings to be fair. The marking of scripts for the April 2021 examination was largely fair, consistent and reliable.

CHAPTER 7 STANDARDISATION AND RESULTING

7.1 Introduction

Standardisation is a process that is informed by evidence presented in the form of qualitative and quantitative reports. Its primary aim is to achieve an optimum degree of uniformity in a given context by considering possible sources of variability other than candidates' ability and knowledge. In general, variability may be a result of the standard of question papers, the quality of marking or other related factors. It is for this reason that examination results are standardised to control their variability from one examination session to the next.

Section 17A (4) of the GENFETQA Act of 2001 as amended in 2008 states that the Council may adjust raw marks during the standardisation process. In broad terms, standardisation involves the verification of instructional offering structures, mark capturing, and the computer system used by an assessment body. It includes the development and verification of norms and the production and verification of standardisation booklets in preparation for the standardisation meetings. During standardisation, qualitative inputs from external moderators, internal moderators, monitoring reports and the principles of standardisation are used to inform decisions. The process is concluded by the approval of mark adjustments per instructional offering, statistical moderation, and the resulting process.

7.2 Scope and Approach

The Department of Higher Education and Training (DHET) presented 55 instructional offerings for the standardisation of the April 2021 NATED Report 190/191: Engineering Studies N2–N3 Examination. In turn, Umalusi verified the historical averages, the standardisation datasets and electronic booklets before standardisation, adjustments, statistical moderation, and the resulting datasets.

7.2.1 Calculation of the historical averages

Historical averages are calculated using the previous six examination sessions. Once that is done, as per policy requirements, the DHET submits historical averages or norms to Umalusi for verification. Where a distribution contains outliers, the historical average is calculated excluding data from the outlying examination session. Finally, Umalusi considers historical averages during the standardisation process.

7.2.2 Capturing of marks

Umalusi did not monitor the capturing of marks for the April 2021 Examination.

7.2.3 Verification of datasets and standardisation booklets

Although the DHET did not adhere to the timeframes set by Umalusi when submitting standardisation datasets and electronic booklets, the datasets were verified and approved before the standardisation meeting.

7.2.4 Pre-standardisation and standardisation

The pre-standardisation and standardisation meetings for the April 2021 NATED Report 190/191: Engineering Studies N2–N3 examinations were initially scheduled for 13 May 2021. These were rescheduled for 17 May 2021, however, because the DHET failed to meet the set deadlines for the submission of data.

Umalusi was guided by several factors in reaching its standardisation decisions, including qualitative and quantitative information. Qualitative input included reports from Umalusi's external moderators and monitors on the conduct, administration and management of examinations, and reports received from the DHET. As far as quantitative information was concerned, Umalusi considered historical averages and pairs analysis, together with standardisation principles.

7.2.5 Post-standardisation

Once the standardisation meetings had been concluded, the DHET submitted the final adjustments and candidates' resulting files for verification and final approval.

7.3 Findings and decisions

7.3.1 Calculation of historical averages

As explained above, the historical averages for NATED Report 190/191: Engineering Studies N2–N3 examinations were calculated using the previous six examination sessions. To do this, the DHET was required to submit the historical averages for verification in accordance with the Umalusi management plan. Where outliers were found, the principle of exclusion was applied and, as a result, the norm was calculated using five examination sittings. Table 7A indicates instructional offerings with outliers.

Table 7A: Instructional offerings with outliers

Level	Code	Instructional Offerings	Excluded Examination Sessions
N2	8120022	Water and Waste-Water Treatment	202008
N3	11040343	Electrotechnology	201908

7.3.2 Verification of datasets and standardisation booklets

The standardisation datasets and electronic booklets submitted for the April 2021 NATED Report 190/191 Engineering Studies N2–N3 examinations adhered to the requirements as spelled out in the Requirements and Specifications for Standardisation, Statistical Moderation and Resulting Policy. The standardisation and electronic booklets were submitted and approved during the first submission.

7.3.3 Pre-standardisation and standardisation

Standardisation decisions were informed by qualitative reports from external moderators, examination monitors, and chief markers.

The DHET presented 55 instructional offerings for the standardisation of the NATED Report 190/191 Engineering Studies N2–N3 Examinations. The decisions for the April 2021 NATED examinations were

informed by trends in student performance, the qualitative input, the historical averages, and pairs analysis. Finally, all instructional offerings that had been presented were standardised.

The Assessment Standards Committee (ASC) observed a significant drop in numbers of high performing candidates in Supervision in Industry N3. Furthermore, the ASC noted with concern the continued poor performance in Waste-Water Treatment Practice N2 and N3. The ASC noted with concern the poor performance in Plant Operation N2, despite the low enrolment, and urged the DHET to investigate. Furthermore, the ASC observed that examinations for Mathematics N2 and N3 appeared to have been less challenging than previous years and urged the DHET to investigate the quality of these papers.

High absenteeism rates were also observed in the following instructional offerings: Electrical Trade Theory N2; Electro-Technology N3; Engineering Science N2 and N3; and Mathematics N2 and N3. There was a general increase in irregular candidates in several instructional offerings, particularly in Mathematics N2 and N3.

Table 7B provides a summary of the standardisation decisions.

Table 7B: Standardisation decisions for NATED Report 190/191: Engineering Studies N2 and N3

Description	Total
Number of instructional offerings presented	55
Raw marks accepted	27
Adjustments (mainly upwards)	16
Adjustments (mainly downwards)	12
Number of instructional offerings standardised	55

7.3.4 Post standardisation

N2 and N3 adjustments were approved during the first submission. The statistical moderation and resulting datasets for N2 and N3 were approved during the first and second submissions, respectively.

7.4 Areas of Improvement

The following areas of compliance were observed:

- a. The e-standardisation booklet was successfully submitted in the prescribed format; and
- b. The historical average and the statistical moderation and candidate files were approved during the first submission.

7.5 Areas of Non-compliance

The following areas of concern were observed:

- a. Recurrence of the use of questions from previous question papers and questions taken verbatim from textbooks;
- b. High absenteeism rates in both N2 and N3;
- c. The need to make adjustments to more than 50% of the instructional offerings is disturbing; and
- d. The poor performance in Plant Operation N2.

7.6 Directives for Improvement and Compliance

The DHET is requested to ensure that:

- a. Strategies are put in place to avoid the reuse of previous question papers, and questions that are taken verbatim from textbooks;
- b. Strategies are put in place to reduce high absenteeism in both N2 and N3; and
- c. Strategies are put in place to improve candidates' performance.

7.7 Conclusion

The standardisation process was conducted in a systematic, objective, and transparent manner. The decisions to accept the raw marks or to perform slight upward or downward adjustments were based on sound educational reasoning.

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