NATIONAL CERTIFICATES (VOCATIONAL)

ASSESSMENT GUIDELINES

INTRODUCTION TO INFORMATION SYSTEMS
NQF LEVEL 2

September 2007
CONTENTS

SECTION A: PURPOSE OF THE SUBJECT ASSESSMENT GUIDELINES

SECTION B: ASSESSMENT IN THE NATIONAL CERTIFICATES (VOCATIONAL)

1 Assessment in the National Certificates (Vocational)
2 Assessment framework for vocational qualifications
   2.1 Internal continuous assessment (ICASS)
   2.2 External summative assessment (ESASS)
3 Moderation of assessment
   3.1 Internal moderation
   3.2 External moderation
4 Period of validity of internal continuous assessment (ICASS)
5 Assessor requirements
6 Types of assessment
   6.1 Baseline assessment
   6.2 Diagnostic assessment
   6.3 Formative assessment
   6.4 Summative assessment
7 Planning assessment
   7.1 Collecting evidence
   7.2 Recording
   7.3 Reporting
8 Methods of assessment
9 Instruments and tools for collecting evidence
10 Tools for assessing student performance
11 Selecting and/or designing recording and reporting systems
12 Competence descriptions
13 Strategies for collecting evidence
   13.1 Record sheets
   13.2 Checklists

SECTION C: ASSESSMENT IN INTRODUCTION TO INFORMATION SYSTEMS

1 Schedule of assessment
2 Recording and reporting
3 Internal assessment of Subject Outcomes in Introduction to Information Systems – Level 2
4 Specifications for the external assessment in Introduction to Information Systems – Level 2
   4.1 Integrated summative assessment task (ISAT)
   4.2 National examination
SECTION A: PURPOSE OF THE SUBJECT ASSESSMENT GUIDELINES

This document provides the lecturer with guidelines to develop and implement a coherent, integrated assessment system for Introduction to Information Systems in the National Certificates (Vocational). It must be read with the National Policy Regarding Further Education and Training Programmes: Approval of the Documents, Policy for the National Certificates (Vocational) Qualifications at Levels 2 to 4 on the National Qualifications Framework (NQF). This assessment guideline will be used for National Qualifications Framework Levels 2-4.

This document explains the requirements for the internal and external subject assessment. The lecturer must use this document with the Subject Guidelines: Introduction to Information Systems to prepare for and deliver Introduction to Information Systems. Lecturers should use a variety of resources and apply a range of assessment skills in the setting, marking and recording of assessment tasks.

SECTION B: ASSESSMENT IN THE NATIONAL CERTIFICATES (VOCATIONAL)

1 ASSESSMENT IN THE NATIONAL CERTIFICATES (VOCATIONAL)
Assessment in the National Certificates (Vocational) is underpinned by the objectives of the National Qualifications Framework (NQF). These objectives are to:

- Create an integrated national framework for learning achievements.
- Facilitate access to and progression within education, training and career paths.
- Enhance the quality of education and training.
- Redress unfair discrimination and past imbalances and thereby accelerate employment opportunities.
- Contribute to the holistic development of the student by addressing:
  - social adjustment and responsibility;
  - moral accountability and ethical work orientation;
  - economic participation; and
  - nation-building.

The principles that drive these objectives are:

- **Integration**
  To adopt a unified approach to education and training that will strengthen the human resources development capacity of the nation.

- **Relevance**
  To be dynamic and responsive to national development needs.

- **Credibility**
  To demonstrate national and international value and recognition of qualification and acquired competencies and skills.

- **Coherence**
  To work within a consistent framework of principles and certification.

- **Flexibility**
  To allow for creativity and resourcefulness when achieving Learning Outcomes, to cater for different learning styles and use a range of assessment methods, instruments and techniques.

- **Participation**
  To enable stakeholders to participate in setting standards and co-ordinating the achievement of the qualification.

- **Access**
  To address barriers to learning at each level to facilitate students’ progress.
• **Progression**
To ensure that the qualification framework permits individuals to move through the levels of the national qualification via different, appropriate combinations of the components of the delivery system.

• **Portability**
To enable students to transfer credits of qualifications from one learning institution and/or employer to another institution or employer.

• **Articulation**
To allow for vertical and horizontal mobility in the education system when accredited pre-requisites have been successfully completed.

• **Recognition of Prior Learning**
To grant credits for a unit of learning following an assessment or if a student possesses the capabilities specified in the outcomes statement.

• **Validity of assessments**
To ensure assessment covers a broad range of knowledge, skills, values and attitudes (SKVAs) needed to demonstrate applied competency. This is achieved through:
  - clearly stating the outcome to be assessed;
  - selecting the appropriate or suitable evidence;
  - matching the evidence with a compatible or appropriate method of assessment; and
  - selecting and constructing an instrument(s) of assessment.

• **Reliability**
To assure assessment practices are consistent so that the same result or judgment is arrived at if the assessment is replicated in the same context. This demands consistency in the interpretation of evidence; therefore, careful monitoring of assessment is vital.

• **Fairness and transparency**
To verify that no assessment process or method(s) hinders or unfairly advantages any student. The following could constitute unfairness in assessment:
  - Inequality of opportunities, resources or teaching and learning approaches
  - Bias based on ethnicity, race, gender, age, disability or social class
  - Lack of clarity regarding Learning Outcome being assessed
  - Comparison of students’ work with other students, based on learning styles and language

• **Practicability and cost-effectiveness**
To integrate assessment practices within an outcomes-based education and training system and strive for cost and time-effective assessment.

2 **ASSESSMENT FRAMEWORK FOR VOCATIONAL QUALIFICATIONS**
The assessment structure for the National Certificates (Vocational) qualification is as follows:

2.1 **Internal continuous assessment (ICASS)**
Knowledge, skills values, and attitudes (SKVAs) are assessed throughout the year using assessment instruments such as projects, tests, assignments, investigations, role-play and case studies. The internal continuous assessment (ICASS) practical component is undertaken in a real workplace, a workshop or a “Structured Environment”. This component is moderated internally and externally quality assured by Umalusi. All internal continuous assessment (ICASS) evidence is kept in a Portfolio of Evidence (PoE) and must be readily available for monitoring, moderation and verification purposes.

2.2 **External summative assessment (ESASS)**
The external summative assessment is either a single or a set of written papers set to the requirements of the Subject Learning Outcomes. The Department of Education administers the theoretical component according to relevant assessment policies.
A compulsory component of external summative assessment (ESASS) is the **integrated summative assessment task (ISAT)**. This assessment task draws on the students’ cumulative learning throughout the year. The task requires **integrated application of competence** and is executed under strict assessment conditions. The task should take place in a simulated or “Structured Environment”. The integrated summative assessment task (ISAT) is the most significant test of students’ ability to apply their acquired knowledge.

The integrated assessment approach allows students to be assessed in more than one subject with the same integrated summative assessment task (ISAT).

External summative assessments will be conducted annually between October and December, with provision made for supplementary sittings.

### 3 MODERATION OF ASSESSMENT

#### 3.1 Internal moderation

Assessment must be moderated according to the internal moderation policy of the Further Education and Training (FET) college. Internal college moderation is a continuous process. The moderator’s involvement starts with the planning of assessment methods and instruments and follows with continuous collaboration and support to the assessors. Internal moderation creates common understanding of Assessment Standards and maintains these across vocational programmes.

#### 3.2 External moderation

External moderation is conducted by the Department of Education, Umalusi and, where relevant, an Education and Training Quality Assurance (ETQA) body according to South African Qualifications Authority (SAQA) and Umalusi standards and requirements.

The external moderator:

- monitors and evaluates the standard of all summative assessments;
- maintains standards by exercising appropriate influence and control over assessors;
- ensures proper procedures are followed;
- ensures summative integrated assessments are correctly administered;
- observes a minimum sample of ten (10) to twenty-five (25) percent of summative assessments;
- gives written feedback to the relevant quality assuror; and
- moderates in case of a dispute between an assessor and a student.

Policy on inclusive education requires that assessment procedures for students who experience barriers to learning be customised and supported to enable these students to achieve their maximum potential.

### 4 PERIOD OF VALIDITY OF INTERNAL CONTINUOUS ASSESSMENT (ICASS)

The period of validity of the internal continuous assessment mark is determined by the *National Policy on the Conduct, Administration and Management of the Assessment of the National Certificates (Vocational)*.

The internal continuous assessment (ICASS) must be re-submitted with each examination enrolment for which it constitutes a component.

### 5 ASSESSOR REQUIREMENTS

Assessors must be subject specialists and should ideally be declared competent against the standards set by the ETDP SETA. If the lecturer conducting the assessments has not been declared a competent assessor, an assessor who has been declared competent may be appointed to oversee the assessment process to ensure the quality and integrity of assessments.

### 6 TYPES OF ASSESSMENT

Assessment benefits the student and the lecturer. It informs students about their progress and helps lecturers make informed decisions at different stages of the learning process. Depending on the intended purpose, different types of assessment can be used.
6.1 Baseline assessment
At the beginning of a level or learning experience, baseline assessment establishes the knowledge, skills, values and attitudes (SKVAs) that students bring to the classroom. This knowledge assists lecturers to plan learning programmes and learning activities.

6.2 Diagnostic assessment
This assessment diagnoses the nature and causes of learning barriers experienced by specific students. It is followed by guidance, appropriate support and intervention strategies. This type of assessment is useful to make referrals for students requiring specialist help.

6.3 Formative assessment
This assessment monitors and supports teaching and learning. It determines student strengths and weaknesses and provides feedback on progress. It determines if a student is ready for summative assessment.

6.4 Summative assessment
This type of assessment gives an overall picture of student progress at a given time. It determines whether the student is sufficiently competent to progress to the next level.

7 PLANNING ASSESSMENT
An assessment plan should cover three main processes:

7.1 Collecting evidence
The assessment plan indicates which Subject Outcomes and Assessment Standards will be assessed, what assessment method or activity will be used and when this assessment will be conducted.

7.2 Recording
Recording refers to the assessment instruments or tools with which the assessment will be captured or recorded. Therefore, appropriate assessment instruments must be developed or adapted.

7.3 Reporting
All the evidence is put together in a report to deliver a decision for the subject.

8 METHODS OF ASSESSMENT
Methods of assessment refer to who carries out the assessment and includes lecturer assessment, self-assessment, peer assessment and group assessment.

<table>
<thead>
<tr>
<th>LECTURER ASSESSMENT</th>
<th>The lecturer assesses students’ performance against given criteria in different contexts, such as individual work, group work, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SELF-ASSESSMENT</td>
<td>Students assess their own performance against given criteria in different contexts, such as individual work, group work, etc.</td>
</tr>
<tr>
<td>PEER ASSESSMENT</td>
<td>Students assess another student or group of students’ performance against given criteria in different contexts, such as individual work, group work, etc.</td>
</tr>
<tr>
<td>GROUP ASSESSMENT</td>
<td>Students assess the individual performance of other students within a group or the overall performance of a group of students against given criteria.</td>
</tr>
</tbody>
</table>

9 INSTRUMENTS AND TOOLS FOR COLLECTING EVIDENCE
All evidence collected for assessment purposes is kept or recorded in the student’s Portfolio of Evidence (PoE).

The following table summarises a variety of methods and instruments for collecting evidence. A method and instrument is chosen to give students ample opportunity to demonstrate the Subject Outcome has been attained. This will only be possible if the chosen methods and instruments are appropriate for the target group and the Specific Outcome being assessed.
## METHODS FOR COLLECTING EVIDENCE

<table>
<thead>
<tr>
<th>Observation-based (Less structured)</th>
<th>Task-based (Structured)</th>
<th>Test-based (More structured)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation</td>
<td>Assignments or tasks</td>
<td>Examinations</td>
</tr>
<tr>
<td>Class questions</td>
<td>Projects</td>
<td>Class tests</td>
</tr>
<tr>
<td>Lecturer, student, parent discussions</td>
<td>Investigations or research</td>
<td>Practical examinations</td>
</tr>
<tr>
<td></td>
<td>Case studies</td>
<td>Oral tests</td>
</tr>
<tr>
<td></td>
<td>Practical exercises</td>
<td>Open-book tests</td>
</tr>
<tr>
<td></td>
<td>Demonstrations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Role-play</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interviews</td>
<td></td>
</tr>
</tbody>
</table>

### Assessment instruments
- Observation
- Class questions
- Lecturer, student, parent discussions
- Assignments or tasks
- Projects
- Investigations or research
- Case studies
- Practical exercises
- Demonstrations
- Role-play
- Interviews
- Examinations
- Class tests
- Practical examinations
- Oral tests
- Open-book tests

### Assessment tools
- Observation sheets
- Lecturer's notes
- Comments
- Checklists
- Rating scales
- Rubrics
- Marks (e.g. %)
- Rating scales (1-7)

### Evidence
- Focus on individual students
- Subjective evidence based on lecturer observations and impressions
- Open middle: Students produce the same evidence but in different ways.
- Open end: Students use same process to achieve different results.
- Students answer the same questions in the same way, within the same time.

### 10 TOOLS FOR ASSESSENG STUDENT PERFORMANCE

**Rating scales** are marking systems where a symbol (such as 1 to 7) or a mark (such as 5/10 or 50%) is defined in detail. The detail is as important as the coded score. Traditional marking, assessment and evaluation mostly used rating scales without details such as what was right or wrong, weak or strong, etc.

**Task lists** and checklists show the student what needs to be done. They consist of short statements describing the expected performance in a particular task. The statements on the checklist can be ticked off when the student has adequately achieved the criterion. Checklists and task lists are useful in peer or group assessment activities.

**Rubrics** are a hierarchy (graded levels) of criteria with benchmarks that describe the minimum level of acceptable performance or achievement for each criterion. It is a different way of assessment and cannot be compared to tests. Each criterion described in the rubric must be assessed separately. Mainly, two types of rubrics, namely holistic and analytical, are used.

### 11 SELECTING AND/OR DESIGNING RECORDING AND REPORTING SYSTEMS

The selection or design of recording and reporting systems depends on the purpose of recording and reporting student achievement. Why particular information is recorded and how it is recorded determine which instrument will be used.

Computer-based systems, for example spreadsheets, are cost and time effective. The recording system should be user-friendly and information should be easily accessed and retrieved.

### 12 COMPETENCE DESCRIPTIONS

All assessment should award marks to evaluate specific assessment tasks. However, marks should be awarded against rubrics and not simply be a total of ticks for right answers. Rubrics should explain the competence level descriptors for the skills, knowledge, values and attitudes (SKVAs) a student must demonstrate to achieve each level of the rating scale.

When lecturers or assessors prepare an assessment task or question, they must ensure that the task or question addresses an aspect of a Subject Outcome. The relevant Assessment Standard must be used to create the rubric to assess the task or question. The descriptions must clearly indicate the minimum level of attainment for each category on the rating scale.
13 STRATEGIES FOR COLLECTING EVIDENCE

A number of different assessment instruments may be used to collect and record evidence. Examples of instruments that can be (adapted and) used in the classroom include:

13.1 Record sheets
The lecturer observes students working in a group. These observations are recorded in a summary table at the end of each project. The lecturer can design a record sheet to observe students’ interactive and problem-solving skills, attitudes towards group work and involvement in a group activity.

13.2 Checklists
Checklists should have clear categories to ensure that the objectives are effectively met. The categories should describe how the activities are evaluated and against what criteria they are evaluated. Space for comments is essential.

SECTION C: ASSESSMENT IN INTRODUCTION TO INFORMATION SYSTEMS

1 SCHEDULE OF ASSESSMENT
At NQF levels 2, 3 and 4, lecturers will conduct assessments as well as develop a schedule of formal assessments that will be undertaken in the year. All three levels also have an external examination that accounts for 50 percent of the total mark. The marks allocated to assessment tasks completed during the year, kept or recorded in a Portfolio of Evidence (PoE) account for the other 50 percent.

The Portfolio of Evidence (PoE) and the external assessment include practical and written components. The practical assessment in Introduction to Information Systems, must, where necessary, be subjected to external moderation by Umalusi or an appropriate Education and Training Quality Assurance (ETQA) body, appointed by the Umalusi Council in terms of Section 28(2) of the General and Further Education and Training Quality Assurance Act, 2001 (Act No. 58 of 2001).

2 RECORDING AND REPORTING
Introduction to Information Systems and Systems Analysis and Design, as is the case for all the other Vocational subjects, is assessed according to five levels of competence. The level descriptions are explained in the following table.

<table>
<thead>
<tr>
<th>Scale of Achievement for the Vocational component</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RATING CODE</strong></td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

The programme of assessment should be recorded in the Lecturer’s Portfolio of Assessment for each subject. The following should at least be included in the Lecturer’s Assessment Portfolio:

- A contents page
- The formal schedule of assessment
- The requirements for each assessment task
- The tools used for each assessment task
- Recording instrument(s) for each assessment task
- A mark sheet and report for each assessment task

The college must standardise these documents.

The student’s Portfolio of Evidence (PoE) must at least include:

- A contents page
- The assessment tasks according to the assessment schedule
• The assessment tools or instruments for the task
• A record of the marks (and comments) achieved for each task

Where tasks cannot be contained as evidence in the Portfolio of Evidence (PoE), its exact location must be recorded and it must be readily available for moderation purposes.
ASSESSMENT OF
INTRODUCTION TO INFORMATION SYSTEMS
LEVEL 2
### 3 INTERNAL ASSESSMENT OF SUBJECT OUTCOMES IN INTRODUCTION TO INFORMATION SYSTEMS – LEVEL 2

#### Topic 1: The Role and Significance of Information Processing in the Business Organisation

<table>
<thead>
<tr>
<th>SUBJECT OUTCOME</th>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Define management theory.</strong></td>
<td>The term management is defined. The definition identifies management functions in an organisation. The definition identifies the levels in which management is involved in decision-making.</td>
<td>Define the term management range: planning, organising, staffing, directing, co-ordinating and controlling. Identify management functions in an organisation. Identify the various levels in which management is involved in decision-making.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SUBJECT OUTCOME</th>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explain the processes followed by managers when making decisions.</strong></td>
<td>The explanation identifies the steps that are followed by managers to make decisions. The description identifies the characteristics involved in decision-making.</td>
<td>Identify the steps that managers follow to make decisions. Identify the characteristics involved in decision-making.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SUBJECT OUTCOME</th>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Define organisational theory.</strong></td>
<td>The term organisation is defined. The definition identifies interrelated elements that make up an organisation.</td>
<td>Define the term organisation. Identify the interrelated elements that make up an organisation.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SUBJECT OUTCOME</th>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explain why managers need information.</strong></td>
<td>The explanation identifies the factors that assist managers to make meaningful decisions. The explanation identifies the characteristics that managers use to analyse the need for information.</td>
<td>Identify the factors that assist managers to make meaningful decisions. Identify the characteristics that managers use to analyse the need for information.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SUBJECT OUTCOME</th>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explain the importance of information systems in a business.</strong></td>
<td>The explanation identifies basic information needs that must be fulfilled by information systems.</td>
<td>Identify the basic information needs that must be fulfilled by information systems.</td>
</tr>
</tbody>
</table>

#### ASSESSMENT TASKS OR ACTIVITIES FOR TOPIC 1
- Assignments or tasks
- Investigations or research
- Case studies
# Topic 2: Technology and its Components

## SUBJECT OUTCOME

**Define the term information technology.**

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARD</th>
<th>LEARNING OUTCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>The term information technology is defined.</td>
<td>Define information technology.</td>
</tr>
</tbody>
</table>

## SUBJECT OUTCOME

**Define the term information systems.**

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>The term information system is defined.</td>
<td>Define the term information system.</td>
</tr>
<tr>
<td>The main objective of information system’s is given.</td>
<td>Explain the main objective of information systems.</td>
</tr>
</tbody>
</table>

## SUBJECT OUTCOME

**Define the term management information systems**

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARD</th>
<th>LEARNING OUTCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>The definition explains knowledge base and its use.</td>
<td>Define knowledge base and explain its use.</td>
</tr>
</tbody>
</table>

## SUBJECT OUTCOME

**Define data, information and knowledge.**

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>The term data is defined.</td>
<td>Define data.</td>
</tr>
<tr>
<td>The term information is defined.</td>
<td>Define information.</td>
</tr>
<tr>
<td>The term knowledge is defined.</td>
<td>Define knowledge.</td>
</tr>
</tbody>
</table>

## SUBJECT OUTCOME

**Explain the basic elements of an information system.**

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARD</th>
<th>LEARNING OUTCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>The explanation identifies the basic elements of an information system.</td>
<td>Identify the basic elements of an information system.</td>
</tr>
</tbody>
</table>

## SUBJECT OUTCOME

**Explain the principles for the design of information systems.**

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>The explanation identifies the aspects of systems principles.</td>
<td>Identify the aspects of systems principles.</td>
</tr>
<tr>
<td>The explanation identifies the factors to be considered when designing an information system.</td>
<td>Identify the factors that must be considered when designing an information system.</td>
</tr>
</tbody>
</table>

## SUBJECT OUTCOME

**Explain the role of information systems in business.**

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARD</th>
<th>LEARNING OUTCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>The role of information systems in business is explained.</td>
<td>Explain the role of information systems in business.</td>
</tr>
</tbody>
</table>
ASSESSMENT TASKS OR ACTIVITIES FOR TOPIC 2

- Assignments or tasks
- Investigations or research
- Case studies

Topic 3: The Impact of Information Technology on Business Practices and the Economy

SUBJECT OUTCOME

Explain the impact of computers on management and information systems.

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>The explanation differentiates between the centralisation and decentralisation of information systems.</td>
<td>Differentiate between centralisation and decentralisation of information systems.</td>
</tr>
<tr>
<td>The explanation identifies three areas in which computers affect management.</td>
<td>Identify three areas where computers affect management.</td>
</tr>
<tr>
<td>The explanation identifies specific capabilities of computers in managerial practices.</td>
<td>Identify specific capabilities of computers in managerial practices.</td>
</tr>
</tbody>
</table>

SUBJECT OUTCOME

Explain the impact of computers on control.

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>The explanation identifies the controls needed for computer-based information systems.</td>
<td>Identify the controls that are needed for computer-based information systems.</td>
</tr>
<tr>
<td>The explanation identifies the additional controls required in computer-based data processing systems.</td>
<td>Identify additional controls that are required in computer data processing systems.</td>
</tr>
</tbody>
</table>

SUBJECT OUTCOME

Explain the risks and advantages associated with computerised operations in business.

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>The term risk is explained.</td>
<td>Explain the term risk.</td>
</tr>
<tr>
<td>The explanation categorises potential threats to a business organisation.</td>
<td>Categorise potential threats to a business organisation.</td>
</tr>
<tr>
<td>The explanation identifies the advantages of computer processing.</td>
<td>Identify the advantages of computer processing.</td>
</tr>
</tbody>
</table>

SUBJECT OUTCOME

Explain the impact of information technology on business practices and on the economy.

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>The changes which information technology has had on the organisation of large businesses are explained.</td>
<td>Explain what changes information technology has had on the organisation of a large business.</td>
</tr>
<tr>
<td>The influences information technology developments have had on business are explained.</td>
<td>Explain the influences information technology developments have had on business.</td>
</tr>
<tr>
<td>The explanation describes how modern-day information technology has become part of the economy.</td>
<td>Describe how modern-day information technology has become a part of the economy.</td>
</tr>
</tbody>
</table>

ASSESSMENT TASKS OR ACTIVITIES FOR TOPIC 3

- Assignments or tasks
- Investigations or research
- Case studies
### Topic 4: The History of Computers

#### SUBJECT OUTCOME
Describe the birth of the computer.

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>The description identifies the early years of computing.</td>
<td>Identify the early years of computing.</td>
</tr>
<tr>
<td>The birth of the computer is described.</td>
<td>Describe the birth of the computer.</td>
</tr>
<tr>
<td>The description identifies electromechanical computing devices.</td>
<td>Identify electromechanical computing devices.</td>
</tr>
<tr>
<td>The description identifies electronic computing devices.</td>
<td>Identify electronic computing devices.</td>
</tr>
</tbody>
</table>

#### SUBJECT OUTCOME
Identify the different computer classes.

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>The identification describes the three different ways in which computers are classified.</td>
<td>Describe the three different ways in which computers are classified.</td>
</tr>
<tr>
<td>The identification distinguishes between the four types of computers.</td>
<td>Distinguish between the four types of computers.</td>
</tr>
<tr>
<td>The identification compares the characteristics of the five generations of computers.</td>
<td>Compare the characteristics of the five generations of computers.</td>
</tr>
<tr>
<td>The identification differentiates between general-purpose, special-purpose and pervasive and convergence of computers, media and communications in computing.</td>
<td>Differentiate between general-purpose, special-purpose and pervasive and convergence of computers, media and communications in computing.</td>
</tr>
</tbody>
</table>

#### SUBJECT OUTCOME
Explain the advances in memory and processor technology.

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>The explanation identifies the developments that have taken place in advancing memory technology.</td>
<td>Identify the developments that have taken place in advancing memory technology.</td>
</tr>
<tr>
<td>The explanation identifies the developments that have taken place in advancing processor technology.</td>
<td>Identify the developments that have taken place in advancing processor technology.</td>
</tr>
<tr>
<td>The explanation identifies three categories of peripheral devices.</td>
<td>Identify three categories of peripheral devices.</td>
</tr>
</tbody>
</table>

#### SUBJECT OUTCOME
Describe the different modes of processing.

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARD</th>
<th>LEARNING OUTCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>The different modes of processing are identified.</td>
<td>Identify the different modes of processing.</td>
</tr>
</tbody>
</table>

#### ASSESSMENT TASKS OR ACTIVITIES FOR TOPIC 4
- Assignments or tasks
- Investigations or research
- Case studies
- Demonstrations

### Topic 5: The Principal Components of Computers

#### SUBJECT OUTCOME
Describe the computer as an electronic processor.

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>The term computer is described.</td>
<td>Describe the term computer.</td>
</tr>
</tbody>
</table>
• The term stored program is explained.
• The way in which data and a program are represented in a computer is explained.

SUBJECT OUTCOME
Describe the functioning of the central processing unit.

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>The description identifies two major parts of the central processing unit and their functions.</td>
<td>Identify two major parts of the central processing unit and their functions.</td>
</tr>
<tr>
<td>The description explains the addressable location of data.</td>
<td>Explain the addressable location of data.</td>
</tr>
<tr>
<td>The description explains the way in which processing speed is measured.</td>
<td>Explain the way in which processing speed is measured.</td>
</tr>
<tr>
<td>The description explains the function of main memory in computer technology.</td>
<td>Explain the function of main memory in computer technology.</td>
</tr>
<tr>
<td>The description identifies the different types of main memory.</td>
<td>Identify the different types of main memory.</td>
</tr>
<tr>
<td>The description explains how data and programs are represented in the computer.</td>
<td>Explain how data and programs are represented in the computer.</td>
</tr>
<tr>
<td>Range includes, but is not limited to, binary coding, character format, octal and hexadecimal and representation of sound and images.</td>
<td></td>
</tr>
<tr>
<td>The description explains the functioning of the central processing unit.</td>
<td>Explain the functioning of the central processing unit.</td>
</tr>
<tr>
<td>The description identifies other central processing unit technologies.</td>
<td>Identify other central processing unit technologies.</td>
</tr>
<tr>
<td>The description identifies the motherboard and its components.</td>
<td>Identify the motherboard and its components.</td>
</tr>
</tbody>
</table>

ASSESSMENT TASKS OR ACTIVITIES FOR TOPIC 5
• Assignments or tasks
• Investigations or research
• Case studies

Topic 6: Input Hardware

SUBJECT OUTCOME
Describe the difference between input and direct-entry hardware.

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>The term input hardware is described.</td>
<td>Describe the term input hardware.</td>
</tr>
<tr>
<td>The description identifies the two types of input devices.</td>
<td>Identify the two types of input devices.</td>
</tr>
<tr>
<td>The difference between the keyboard entry and direct-entry hardware is described.</td>
<td>Describe the difference between keyboard entry and direct-entry hardware.</td>
</tr>
</tbody>
</table>

SUBJECT OUTCOME
Discuss the fundamentals of using a keyboard for input.

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>The standard typewriter keys are explained.</td>
<td>Explain and identify standard typewriter keys.</td>
</tr>
<tr>
<td>The use of cursor movement keys is explained.</td>
<td>Explain and demonstrate the use of cursor movement keys.</td>
</tr>
<tr>
<td>The use of numeric keypad is explained.</td>
<td>Explain and demonstrate the use of the numeric keypad.</td>
</tr>
<tr>
<td>The use of function keys is explained.</td>
<td>Explain and demonstrate the use of function keys.</td>
</tr>
<tr>
<td>The use of special-purpose keys is explained.</td>
<td>Explain and demonstrate the use of special-purpose keys.</td>
</tr>
</tbody>
</table>
### SUBJECT OUTCOME
Describe the three different types of terminals used for data input.

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>The term terminal is explained.</td>
<td>Explain the term terminal.</td>
</tr>
<tr>
<td>The description explains the three different types of terminals used for data input.</td>
<td>Explain the three different types of terminals used for data input.</td>
</tr>
<tr>
<td>The description identifies examples of terminals per type.</td>
<td>Identify examples of terminals per type.</td>
</tr>
</tbody>
</table>

### SUBJECT OUTCOME
Describe the different categories of direct-entry input devices.

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>The description identifies different pointing devices used for direct-entry input.</td>
<td>Identify different pointing devices used for direct-entry input.</td>
</tr>
<tr>
<td>The description identifies different scanning devices and how they are used.</td>
<td>Identify different scanning devices and how they are used.</td>
</tr>
<tr>
<td>The description identifies different voice recognition systems.</td>
<td>Identify different voice recognition systems.</td>
</tr>
</tbody>
</table>

### SUBJECT OUTCOME
Describe audio-input and video-input devices.

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>The description identifies other input devices.</td>
<td>Identify other input devices.</td>
</tr>
<tr>
<td>The description identifies two ways in which audio is digitised.</td>
<td>Describe two ways in which audio is digitised.</td>
</tr>
<tr>
<td>The description identifies two types of video card.</td>
<td>Identify two types of video card.</td>
</tr>
<tr>
<td>The description identifies two types of electronic camera.</td>
<td>Identify two types of electronic camera.</td>
</tr>
<tr>
<td>The description identifies the uses of sensors with examples.</td>
<td>Identify the uses of sensors with examples.</td>
</tr>
</tbody>
</table>

### SUBJECT OUTCOME
Describe the importance of input controls.

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>The description explains the necessity of input controls.</td>
<td>Explain the necessity of input controls.</td>
</tr>
<tr>
<td>The description identifies the control procedures that are used to ensure accuracy of data.</td>
<td>Identify the control procedures that are used to ensure the accuracy of data.</td>
</tr>
</tbody>
</table>

### ASSESSMENT TASKS OR ACTIVITIES FOR TOPIC 6
- Assignments or tasks
- Investigations or research
- Demonstrations
- Case studies
- Practical exercises

### Topic 7: Output Hardware

### SUBJECT OUTCOME
Describe the basic forms of output and categories of output media and hardware.
ASSESSMENT STANDARDS | LEARNING OUTCOMES
---|---
• The term output hardware is described. | • Describe the term output hardware.
• The description identifies the two categories of output devices and lists examples of each. | • Identify the two categories of output devices and list examples of each.

SUBJECT OUTCOME
Describe hardcopy output devices.

ASSESSMENT STANDARDS | LEARNING OUTCOMES
---|---
• The description identifies two types of output devices. | • Identify two types of output devices.
• The description identifies the two printer classifications. | • Identify the two printer classifications.
• The description identifies the major strengths and weaknesses of each printer. | • Identify the major strengths and weaknesses of each printer.
• The description identifies the capabilities of multifunction printing technology. | • Identify the capabilities of multifunction printing technology.
• The description identifies the advantages and disadvantages of using multifunction printers. | • Identify the advantages and disadvantages of using multifunction printers.
• The description identifies three principal kinds of plotters. | • Identify three principal kinds of plotters.
• The description identifies the uses of plotters in a business environment. | • Identify the uses of plotters in a business environment.
• The description identifies the disadvantages of using plotters in a business environment. | • Identify the disadvantages of using plotters in a business environment.

SUBJECT OUTCOME
Describe softcopy output devices.

ASSESSMENT STANDARDS | LEARNING OUTCOMES
---|---
• The description explains softcopy output hardware. | • Explain softcopy output hardware.
• The description identifies the three types of monitors or screens. | • Identify the three types of monitors or screens.
• The description explains the cathode-ray tube (CRT). | • Explain the cathode-ray tube (CRT).
• The description explains the size and resolution of a computer display screen. | • Explain the size and resolution of a computer display screen.
• The description explains flat-panel displays. | • Explain flat-panel displays.
• The description distinguishes flat-panel displays in two ways. | • Distinguish flat-panel displays in two ways.
• The description explains video projection display units. | • Explain video projection display units.

SUBJECT OUTCOME
Describe the audio-output technologies that enable voice and sound output.

ASSESSMENT STANDARD | LEARNING OUTCOME
---|---
• Different types of audio-output devices are identified. | • Identify the different types of audio-output devices.

ASSESSMENT TASKS OR ACTIVITIES FOR TOPIC 7
• Assignments or tasks
• Investigations or research
• Demonstrations
• Case studies
• Practical exercises

Topic 8: Secondary Storage Hardware

SUBJECT OUTCOME
Describe the difference between primary and secondary storage.
### ASSESSMENT STANDARDS
- The term primary storage is described.
- The term secondary storage is described.
- The description explains how data is represented and what measurements units are stored in.
- The term file is described.
- The description identifies the different kinds of files.
- The description distinguishes the difference between batch and real-time processing of data.

### LEARNING OUTCOMES
- Describe the term primary storage.
- Describe the term secondary storage.
- Explain how data is represented and what measurements units are stored in.
- Describe the term file.
- Identify the different kinds of files.
- Distinguish the difference between batch and real-time processing of data.

### SUBJECT OUTCOME
**Describe the term primary storage.**

### ASSESSMENT STANDARDS
- The description explains how data is represented and what measurements units are stored in.
- The term file is described.
- The description identifies the different kinds of files.
- The description distinguishes the difference between batch and real-time processing of data.

### LEARNING OUTCOMES
- Describe the term primary storage.
- Describe the term secondary storage.
- Explain how data is represented and what measurements units are stored in.
- Describe the term file.
- Identify the different kinds of files.
- Distinguish the difference between batch and real-time processing of data.

### SUBJECT OUTCOME
**Describe the term secondary storage.**

### ASSESSMENT STANDARDS
- The description explains how data is represented and what measurements units are stored in.
- The term file is described.
- The description identifies the different kinds of files.
- The description distinguishes the difference between batch and real-time processing of data.

### LEARNING OUTCOMES
- Describe the term primary storage.
- Describe the term secondary storage.
- Explain how data is represented and what measurements units are stored in.
- Describe the term file.
- Identify the different kinds of files.
- Distinguish the difference between batch and real-time processing of data.

### SUBJECT OUTCOME
**Explain the term file.**

### ASSESSMENT STANDARDS
- The description explains how data is represented and what measurements units are stored in.
- The term file is described.
- The description identifies the different kinds of files.
- The description distinguishes the difference between batch and real-time processing of data.

### LEARNING OUTCOMES
- Describe the term primary storage.
- Describe the term secondary storage.
- Explain how data is represented and what measurements units are stored in.
- Describe the term file.
- Identify the different kinds of files.
- Distinguish the difference between batch and real-time processing of data.

### SUBJECT OUTCOME
**Identify the different kinds of files.**

### ASSESSMENT STANDARDS
- The description explains how data is represented and what measurements units are stored in.
- The term file is described.
- The description identifies the different kinds of files.
- The description distinguishes the difference between batch and real-time processing of data.

### LEARNING OUTCOMES
- Describe the term primary storage.
- Describe the term secondary storage.
- Explain how data is represented and what measurements units are stored in.
- Describe the term file.
- Identify the different kinds of files.
- Distinguish the difference between batch and real-time processing of data.

### SUBJECT OUTCOME
**Distinguish the difference between batch and real-time processing of data.**

### ASSESSMENT STANDARDS
- The description explains how data is represented and what measurements units are stored in.
- The term file is described.
- The description identifies the different kinds of files.
- The description distinguishes the difference between batch and real-time processing of data.

### LEARNING OUTCOMES
- Describe the term primary storage.
- Describe the term secondary storage.
- Explain how data is represented and what measurements units are stored in.
- Describe the term file.
- Identify the different kinds of files.
- Distinguish the difference between batch and real-time processing of data.

### SUBJECT OUTCOME
**Explain the term file.**

### ASSESSMENT STANDARDS
- The description explains how data is represented and what measurements units are stored in.
- The term file is described.
- The description identifies the different kinds of files.
- The description distinguishes the difference between batch and real-time processing of data.

### LEARNING OUTCOMES
- Describe the term primary storage.
- Describe the term secondary storage.
- Explain how data is represented and what measurements units are stored in.
- Describe the term file.
- Identify the different kinds of files.
- Distinguish the difference between batch and real-time processing of data.
SUBJECT OUTCOME

Describe why compression techniques are important and how they work.

<table>
<thead>
<tr>
<th>ASSESSMENT STANDARDS</th>
<th>LEARNING OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>The term compression is described.</td>
<td>Describe the term compression.</td>
</tr>
<tr>
<td>The term codec is described.</td>
<td>Describe the term codec.</td>
</tr>
<tr>
<td>The description identifies two compression techniques.</td>
<td>Identify two compression techniques.</td>
</tr>
</tbody>
</table>

ASSESSMENT TASKS OR ACTIVITIES FOR TOPIC 8

- Assignments or tasks
- Investigations or research
- Demonstrations
- Case studies
- Practical exercises

4 SPECIFICATION FOR EXTERNAL ASSESSMENT IN INTRODUCTION TO INFORMATION SYSTEMS – LEVEL 2

4.1 Integrated summative assessment task (ISAT)

A compulsory component of the external assessment (ESASS) is the integrated summative assessment task (ISAT). The integrated summative assessment task (ISAT) draws on the students’ cumulative learning achieved throughout the year. The task requires integrated application of competence and is executed and recorded in compliance with assessment conditions.

Two approaches to the integrated summative assessment task (ISAT) may be as follows:

- The students are assigned a task at the beginning of the year which they will have to complete in phases throughout the year to obtain an assessment mark. A final assessment is made at the end of the year when the task is completed.

  OR

- Students achieve the competencies throughout the year but the competencies are assessed cumulatively in a single assessment or examination session at the end of the year.

  The integrated summative assessment task (ISAT) is set by an externally appointed examiner and is conveyed to colleges in the first quarter of the year.

  The integrated assessment approach enables students to be assessed in more than one subject with the same integrated summative assessment task (ISAT).

4.2 National Examination

A National Examination is conducted annually in October or November by means of a paper(s) set and moderated externally. The following distribution of cognitive application should be followed:

<table>
<thead>
<tr>
<th>LEVEL 2</th>
<th>KNOWLEDGE AND COMPREHENSION</th>
<th>APPLICATION</th>
<th>ANALYSIS, SYNTHESIS AND EVALUATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50%</td>
<td>25%</td>
<td>25%</td>
</tr>
</tbody>
</table>