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NATIONAL CERTIFICATES (VOCATIONAL)

ASSESSMENT GUIDELINES

INTRODUCTION TO INFORMATION SYSTEMS NQF LEVEL 2

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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 with 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 assessor; 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.

LECTURER ASSESSMENT	The lecturer assesses students' performance against given criteria in different contexts, such as individual work, group work, etc.
SELF-ASSESSMENT	Students assess their own performance against given criteria in different contexts, such as individual work, group work, etc.
PEER ASSESSMENT	Students assess another student or group of students' performance against given criteria in different contexts, such as individual work, group work, etc.
GROUP ASSESSMENT	Students assess the individual performance of other students within a group or the overall performance of a group of students against given criteria.

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		
	Observation-based (Less structured)	Task-based (Structured)	Test-based (More structured)
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 ASSESSING 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.

Scale of Achievement for the Vocational component

RATING CODE	RATING	MARKS %
5	Outstanding	80-100
4	Highly competent	70-79
3	Competent	50-69
2	Not yet competent	40-49
1	Not achieved	0-39

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: Computerised Information Processing in the Business Organisation

SUBJECT OUTCOME	
Define management theory.	
ASSESSMENT STANDARDS	LEARNING OUTCOMES
- The term management is defined. <i>Range: planning, organising, staffing, directing, co-ordinating and controlling.</i> - The definition identifies management functions in an organisation. - The definition identifies the levels in which management is involved in decision-making.	- Define the term management - Identify management functions in an organisation. - Identify the various levels in which management is involved in decision-making.
SUBJECT OUTCOME	
Explain the processes followed by managers when making decisions.	
ASSESSMENT STANDARDS	LEARNING OUTCOMES
- The explanation identifies the steps that are followed by managers to make decisions. - The description identifies the characteristics involved in decision-making.	- Identify the steps that managers follow to make decisions. - Identify the characteristics involved in decision-making.
SUBJECT OUTCOME	
Define organisational theory.	
ASSESSMENT STANDARDS	LEARNING OUTCOMES
- The term organisation is defined. - The definition identifies interrelated elements that make up an organisation.	- Define the term organisation. - Identify the interrelated elements that make up an organisation.
SUBJECT OUTCOME	
Explain why managers need information.	
ASSESSMENT STANDARDS	LEARNING OUTCOMES
- 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.	- Identify the factors that assist managers to make meaningful decisions. - Identify the characteristics that managers use to analyse the need for information.
SUBJECT OUTCOME	
Explain the importance of information systems in a business.	
ASSESSMENT STANDARD	LEARNING OUTCOME
The explanation identifies basic information needs that must be fulfilled by information systems.	Identify the basic information needs that must be fulfilled by information systems.
ASSESSMENT TASKS OR ACTIVITIES FOR TOPIC 1	
- Assignments or tasks - Investigations or research - Case studies	

Topic 2: Information Technology and its Components

SUBJECT OUTCOME	
Define information technology terminology.	
ASSESSMENT STANDARD	LEARNING OUTCOME
The term information technology is defined.	Define information technology.
- The term data is defined. - The term information is defined. - The term knowledge is defined.	- Define data. - Define information. - Define knowledge.
SUBJECT OUTCOME	
Describe information systems.	
ASSESSMENT STANDARDS	LEARNING OUTCOMES
- The term information system is defined. - The role of information systems in business is explained. - The main objective of information systems is explained.	- Define the term information system. - Explain the role of information systems in business. - Explain the main objective of information systems.
The explanation identifies the basic elements of an information system.	Identify the basic elements of an information system.
- The basic principles of systems design are explained. - The factors to consider when designing an information system are listed and explained.	- Explain the basic principles of systems design. - List and explain the factors to consider when designing an information system.
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.	
ASSESSMENT STANDARDS	LEARNING OUTCOMES
- The explanation differentiates between the centralisation and decentralisation of information systems. - The explanation identifies three areas in which computers affect management. - The explanation identifies specific capabilities of computers in managerial practices. <i>Range: Top management, middle management, lower level employees (EIS- Executive Information Systems, DSS – Decision Support Systems, TPS – Transaction Processing Systems) reporting Systems & Tools)</i>	- Differentiate between centralisation and decentralisation of information systems. - Identify three areas where computers affect management. - Identify specific capabilities of computers in managerial practices.
SUBJECT OUTCOME	
Explain the impact of computers on the control of business processes.	
ASSESSMENT STANDARDS	LEARNING OUTCOMES
- The explanation identifies the controls needed for computer-based information systems. - The explanation identifies the additional controls required in computer-based data processing systems.	- Identify the controls that are needed for computer-based business information systems. - Identify additional controls that are required in computer data processing systems.

SUBJECT OUTCOME	
Explain the risks and advantages associated with computerised operations in business.	
ASSESSMENT STANDARDS	LEARNING OUTCOMES
- The term risk is explained. - The explanation categorises potential threats to a business organisation. - The explanation identifies the advantages of computer processing.	- Explain the term risk. - Categorise potential threats to a business organisation. - Identify the advantages of computer processing.
SUBJECT OUTCOME	
Explain computer viruses, their impact and management	
ASSESSMENT STANDARDS	LEARNING OUTCOMES
- The term computer virus is explained - Different types of computer viruses are described - Computer viruses are defined in terms of their construction and effect. - The classes of viruses are defined in terms of their impact.	- Explain the term computer virus - Describe different types of computer viruses. - Define computer viruses in terms of their construction and effect. - Define the classes of viruses in terms of their impact.
- Different ways in which computer viruses can spread are described - Methods for protection against computer viruses are described	- Describe different ways in which computer viruses can spread - Describe methods for protection against computer viruses.
- Methods of disinfecting files are described. - Current anti virus software are listed and discussed referring to freeware, shareware and purchased packages, - The reasons for keeping anti-virus software updated are motivated.	- Describe the methods of disinfecting files. - List and discuss examples of current anti-virus software referring to freeware, shareware and purchased packages. - Motivate the reasons for keeping anti-virus software updated.
SUBJECT OUTCOME	
Explain the impact of information technology on business practices and on the economy.	
ASSESSMENT STANDARDS	LEARNING OUTCOMES
- The changes which information technology has had on the organisation of large businesses are explained. - The influences information technology developments have had on business are explained. - The explanation describes how modern-day information technology has become part of the economy.	- Explain what changes information technology has had on the organisation of a large business. - Explain the influences information technology developments have had on business. - Describe how modern-day information technology has become a part of the economy.
- The concept of software piracy is explained. - The impact of software piracy on individuals and businesses is explained - Ways in which piracy could be addressed in South Africa are identified	- Explain the concept of software piracy. - Explain the impact of software piracy on individuals and businesses - Identify ways in which piracy could be addressed in South Africa.
ASSESSMENT TASKS OR ACTIVITIES FOR TOPIC 3	
- Assignments or tasks - Investigations or research - Case studies - Practical exercises	

Topic 4: Introduction to Computer Architecture – Computers and Electronic Information Processing

SUBJECT OUTCOME	
Describe the history and birth of the computer as an information processing tool.	
ASSESSMENT STANDARDS	LEARNING OUTCOMES
- The description identifies the early years of computing with reference to information processing. - The birth of the computer is described.	- Identify the early years of computing with reference to information processing. - Describe the birth of the computer.
- The description identifies electromechanical computing devices. - The description identifies early electronic computing devices.	- Identify electromechanical computing devices. - Identify early electronic computing devices.
SUBJECT OUTCOME	
Describe the computer as an electronic processor.	
ASSESSMENT STANDARDS	LEARNING OUTCOMES
- The term computer is described referring to input, processing, storage and output. - The term stored program is explained. - The way in which data and programs are represented in a computer is explained.	- Describe the term computer in terms of its use referring to input, processing, storage and output. - Explain the term stored program. - Explain the way in which data and programs are represented in a computer
SUBJECT OUTCOME	
Identify the different computer categories.	
ASSESSMENT STANDARDS	LEARNING OUTCOMES
- The identification describes different ways in which computers are classified. <i>Range: portable and non-portable</i> - The identification distinguishes between different types of non-portable computers. <i>Range: desktop, servers, main frame, super computers</i>	- Describe different ways in which computers are classified. - Distinguish between different types of non-portable computers.
- The identification compares the characteristics of the five generations of computers. - The identification differentiates between general-purpose, special-purpose and pervasive and convergence of computers, media and communications in computing.	- Compare the characteristics of the five generations of computers. - Differentiate between general-purpose, special-purpose and pervasive and convergence of computers, media and communications in computing.
SUBJECT OUTCOME	
Describe the functioning of the central processing unit.	
ASSESSMENT STANDARDS	LEARNING OUTCOMES
- The description identifies major parts of the central processing unit and their functions. - The description explains the addressable location of data. - The description explains the way in which processing speed is measured.	- Identify major parts of the central processing unit and their functions. - Explain the addressable location of data. - Explain the way in which processing speed is measured.
- The description explains the function of main memory in computer technology. - The description identifies the different types of main memory. - The description explains how data and programs are represented in the computer.	- Explain the function of main memory in computer technology. - Identify the different types of main memory. - Explain how data and programs are represented in the computer.

<i>Range includes, but is not limited to, binary coding, character format and representation of sound and images.</i>	
- The description explains the functioning of the central processing unit. - The description identifies other central processing unit technologies. - The description identifies the motherboard and its components.	- Explain the functioning of the central processing unit. - Identify other central processing unit technologies. - Identify the motherboard and its components.
SUBJECT OUTCOME	
Explain the advances in memory and processor technology.	
ASSESSMENT STANDARDS	LEARNING OUTCOMES
- The explanation identifies the developments that have taken place in advancing memory technology. - The explanation identifies the developments that have taken place in advancing processor technology. - The explanation identifies the different categories of peripheral devices. <i>Range: Input , Processing Storage, Output</i>	- Identify the developments that have taken place in advancing memory technology. - Identify the developments that have taken place in advancing processor technology. - Identify the different categories of peripheral devices.
SUBJECT OUTCOME	
Describe the different modes of processing.	
ASSESSMENT STANDARD	LEARNING OUTCOME
The different modes of processing are identified.	Identify the different modes of processing.
ASSESSMENT TASKS OR ACTIVITIES FOR TOPIC 4	
- Assignments or tasks - Investigations or research - Demonstrations	- Case studies - Practical exercises

Topic 5: Introduction to Computer Architecture - Input

SUBJECT OUTCOME	
Describe the difference between input and direct-entry hardware.	
ASSESSMENT STANDARDS	LEARNING OUTCOMES
- The term input and input hardware is described. - The description identifies different types of input devices. - The difference between the keyboard entry and direct-entry hardware is described.	- Describe the term input and input hardware. - Identify different types of input devices. - Describe the difference between keyboard entry and direct-entry hardware.
SUBJECT OUTCOME	
Discuss the fundamentals of using a keyboard for input.	
ASSESSMENT STANDARDS	LEARNING OUTCOMES
- Standard typewriter keys are identified and explained. - The use of cursor movement keys is explained and demonstrated. - The use of numeric keypad is explained and demonstrated.	- Identify and explain standard typewriter keys. - Explain and demonstrate the use of cursor movement keys. - Explain and demonstrate the use of the numeric keypad.
- The use of function keys is explained and demonstrated. - The use of special-purpose keys is explained.	- Explain and demonstrate the use of function keys. - Explain and demonstrate the use of special-purpose keys.

SUBJECT OUTCOME	
Describe the different types of terminals used for data input.	
ASSESSMENT STANDARDS	LEARNING OUTCOMES
- The term terminal is explained. - The description explains different types of terminals used for data input. - The description identifies examples of terminals according to type.	- Explain the term terminal. - Explain different types of terminals used for data input. - Identify examples of terminals according to type.
SUBJECT OUTCOME	
Describe the different categories of direct-entry input devices.	
ASSESSMENT STANDARDS	LEARNING OUTCOMES
- The description identifies different pointing devices used for direct-entry input. - The description identifies different scanning devices and how they are used. - The description identifies different voice recognition systems.	- Identify different pointing devices used for direct-entry input. - Identify different scanning devices and how they are used. - Identify different voice recognition systems.
SUBJECT OUTCOME	
Describe audio-input and video-input devices.	
ASSESSMENT STANDARDS	LEARNING OUTCOMES
- The description identifies different ways in which audio is digitised. - The description identifies types of video card.	- Identify different ways in which audio is digitised. - Identify types of video card.
- The description identifies types of electronic camera. - The description identifies uses of sensors with examples.	- Identify types of electronic camera. - Identify uses of sensors with examples.
SUBJECT OUTCOME	
Describe the importance of input controls.	
ASSESSMENT STANDARDS	LEARNING OUTCOMES
- The description explains the necessity of input controls. - The description identifies control procedures used to ensure accuracy of data. <i>Range, Bar Code Entry, Check digits, Checksums</i>	- Explain the necessity of input controls. - Identify control procedures used to ensure accuracy of data.
ASSESSMENT TASKS OR ACTIVITIES FOR TOPIC 5	
- Assignments or tasks - Investigations or research - Demonstrations	- Case studies - Practical exercises

Topic 6: Introduction to Computer Architecture – Output

SUBJECT OUTCOME	
Describe the basic forms of output and categories of output media and hardware.	
ASSESSMENT STANDARDS	LEARNING OUTCOMES
- The terms output and output hardware are described. - The description identifies categories of output devices and lists examples of each.	- Describe the terms output and output hardware. - Identify categories of output devices and list examples of each.

SUBJECT OUTCOME	
Describe hardcopy output devices.	
ASSESSMENT STANDARDS	LEARNING OUTCOMES
- The description identifies different types of output devices. - The description identifies the different printer classifications. - The description identifies the major strengths and weaknesses of each printer.	- Identify types of output devices. - Identify printer classifications. - Identify major strengths and weaknesses of each printer.
- The description identifies the capabilities of multifunction printing technology. - The description identifies the advantages and disadvantages of using multifunction printers.	- Identify capabilities of multifunction printing technology. - Identify advantages and disadvantages of using multifunction printers.
- The description identifies three principal kinds of plotters. - The description identifies the uses of plotters in a business environment. - The description identifies the disadvantages of using plotters in a business environment.	- Identify principal kinds of plotters. - Identify uses of plotters in a business environment. - Identify advantages and disadvantages of using plotters in a business environment.
SUBJECT OUTCOME	
Describe softcopy output devices.	
ASSESSMENT STANDARDS	LEARNING OUTCOMES
- The term softcopy is defined - The description explains softcopy output hardware. - The description identifies the different types of monitors or screens.	- Define the term softcopy - Explain softcopy output hardware. - Identify types of computer monitors or screens.
- The description explains the cathode-ray tube (CRT). - The description explains the size and resolution of a computer display screen. - The description explains flat-panel displays (LCD, Liquid Crystal Displays).	- Explain the cathode-ray tube (CRT). - Explain the size and resolution of a computer display screen. - Explain flat-panel displays (LCD, Liquid Crystal Displays).
- The description distinguishes different flat-panel displays. - Video projection display units are described - Different types of audio-output devices are identified.	- Distinguish between different flat-panel displays - Describe video projection display units. - Identify the different types of audio-output devices.

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

Topic 7: Introduction to Computer Architecture – Storage

SUBJECT OUTCOME	
Describe the difference between primary and secondary storage.	
ASSESSMENT STANDARDS	LEARNING OUTCOMES
- The terms primary storage and secondary storage are described. - Primary and Secondary storage are differentiated. - The description explains how data is represented and what measurements units are stored in.	- Describe the terms primary storage and secondary storage. - Differentiate between primary and secondary storage. - Explain how data is represented and what measurements units are stored in.

- The term file is described. - The description identifies different types of files.	- Describe the term file. - Identify different types of files.
SUBJECT OUTCOME	
Describe the characteristics of portable storage devices.	
ASSESSMENT STANDARDS	LEARNING OUTCOMES
- The description explains portable storage devices and media - The description identifies the characteristics of portable storage devices and media - The description explains how to take care of portable storage devices and media.	- Explain portable storage devices and media. - Identify the characteristics of portable devices and media - Explain how to take care of portable storage devices and media.
SUBJECT OUTCOME	
Describe hard disks for computer systems.	
ASSESSMENT STANDARDS	LEARNING OUTCOMES
- The description explains what a hard disk is. - The description identifies the advantages and disadvantages of hard disks. - The description identifies the characteristics of hard disks.	- Explain what a hard disk is. - Identify the advantages and disadvantages of hard disks. - Identify the characteristics of hard disks.
- The description explains the fixed disk drive. - The description explains the redundant arrays of independent disks (RAID).	- Explain the fixed disk drive. - Explain the redundant arrays of independent disks (RAID).
SUBJECT OUTCOME	
Describe optical disk storage technology.	
ASSESSMENT STANDARDS	LEARNING OUTCOMES
- The term optical disk storage is described. - The description lists the uses of the different types of optical disk storage. - The description explains how to take care of optical storage devices and media.	- Describe the term optical disk storage. - List the uses of the different types of optical disk storage. - Explain how to take care of optical storage devices and media.
SUBJECT OUTCOME	
Explain how data is represented on magnetic media.	
ASSESSMENT STANDARDS	LEARNING OUTCOMES
- The description explains what a magnetic media is. - The description explains how data is represented on magnetic media. - The description explains magnetic media units for large computers.	- Explain what magnetic media is. - Explain how data is represented on magnetic media. - Explain magnetic media units for large computers.
- The description explains the use of cartridge tape units. - The description explains the use of magnetic disk units. - The description explains the importance of backups.	- Explain the use of cartridge tape units. - Explain the use of magnetic disks - Explain the importance of backups.

SUBJECT OUTCOME	
Describe the importance and the implementation of data compression techniques	
ASSESSMENT STANDARDS	LEARNING OUTCOMES
- The term data compression is described. - Different uses of data compression techniques are described. - The term codec is described.	- Describe the term data compression. - Describe different uses of data compression techniques. - Describe the term codec.
- The description identifies different compression techniques. - The advantages of implementing data compression are listed.	- Identify different compression techniques. - List the advantages of implementing data compression.
ASSESSMENT TASKS OR ACTIVITIES FOR TOPIC 7	
- 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:

LEVEL 2	KNOWLEDGE AND COMPREHENSION	APPLICATION	ANALYSIS, SYNTHESIS AND EVALUATION
	50%	25%	25%