NATIONAL CERTIFICATES (VOCATIONAL)

ASSESSMENT GUIDELINES

INTRODUCTION TO SYSTEMS DEVELOPMENT

NQF LEVEL 2

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CONTENTS

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 Systems Development 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 Systems Development* to prepare for and deliver Introduction to Systems Development. 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 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.

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 SYSTEMS DEVELOPMENT

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 Systems Development 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 Systems Development, 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 SYSTEMS DEVELOPMENT

LEVEL 2

3 INTERNAL ASSESSMENT OF SUBJECT OUTCOMES IN INTRODUCTION TO SYSTEMS DEVELOPMENT – LEVEL 2

Topic 1: Basic Concepts of Systems and Application Software

SUBJECT OUTCOME	
Explain what software is and categorise the types of software.	
ASSESSMENT STANDARDS	**LEARNING OUTCOMES**
• An explanation of the term software is given. • The explanation differentiates between the types of software and their purpose. *Range (Application and Systems Software)* • The explanation identifies the differences between open source and proprietary software. • The explanation outlines the reasons why there are different versions within the same software.	• Explain the term software. • Differentiate between the types of software and their purposes. • Differentiate between proprietary and open source software. • Outline the reasons for different versions within the same software.
SUBJECT OUTCOME	
Describe some features common to all types of application software.	
ASSESSMENT STANDARDS	**LEARNING OUTCOMES**
• The description identifies the different features common to all types of applications software. • Different types of application software and their use are listed and described. • The description explains the purpose and use of features common to all types of application software. • The explanation outlines the installation processes for application software.	• Identify and demonstrate the different features common to all types of application software • List and describe different types of application software and their use. • Explain the purpose and use of the types of features common to all types of application software. • Outline the processes for installing application software.
SUBJECT OUTCOME	
Define system software.	
ASSESSMENT STANDARDS	**LEARNING OUTCOMES**
• System software is defined. • Operating system is defined in terms of tasks it performs. • Utility programs are defined in terms of their use. • Language translators are defined in terms of their purpose, with examples.	• Briefly describe the term system software. • Define the operating system in terms of the tasks it performs in a computer. • Define utility programs in terms of their use. • Define language translators in terms of their purpose, with examples.
SUBJECT OUTCOME	
Name and describe microcomputer operating systems and operating environments.	
ASSESSMENT STANDARDS	**LEARNING OUTCOMES**
• Different types of operating systems and the environment in which they operate are named and described. • The environment in which the types of operating systems operate is described. • The description outlines the history of the different operating systems in terms of proprietary and open source.	• Name and describe different types of operating systems. • Describe the environment in which the types of operating systems operate. • Outline the history of the different operating systems in terms of proprietary and open source.
ASSESSMENT TASKS OR ACTIVITIES FOR TOPIC 1	
• Class test • Assignment • Group work	

Topic 2: Software Development and Programming Languages Concepts

SUBJECT OUTCOME	
Describe the generations of programming languages.	
ASSESSMENT STANDARDS	**LEARNING OUTCOMES**
• The description lists the generations of programming languages in which they have evolved. • The description outlines the types and levels of programming languages in terms of technicality, flexibility, user-friendliness and speed. • The description includes strengths and limitations of programming languages.	• List the generations of programming languages in which they have evolved. • Outline the types and levels of programming languages in terms of technicality, flexibility, user-friendliness and speed. • Compare the strengths and limitations of programming languages.
SUBJECT OUTCOME	
Describe the uses for some of the most popular high-level programming languages.	
ASSESSMENT STANDARDS	**LEARNING OUTCOMES**
• The description lists some of the most popular high-level programming languages. • The uses of high-level programming languages are described. • The advantages and disadvantages of high-level programming languages are described.	• List and describe the most popular high-level programming languages. • Explain the uses of high-level programming languages. • Compare the advantages and disadvantages of high-level programming languages.
SUBJECT OUTCOME	
Describe concepts relating to object-oriented and visual programming.	
ASSESSMENT STANDARDS	**LEARNING OUTCOMES**
• Object-oriented and visual programming methodologies are described with reference to EDP (Event Driven Programming) and RAD (Rapid Application Development. • The term visual programming is explained in terms of its concepts. • Object-oriented programming languages are briefly described in terms of the concepts involved. *Range: Classes, objects, encapsulation, abstraction, inheritance, polymorphism*	• Describe object-oriented and visual programming methodologies with reference to EDP (Event Driven Programming) and RAD (Rapid Application Development. • Explain the term visual programming language in terms of its concepts. • Explain object-oriented programming languages in terms of the concepts involved.
• The relation between Visual programming, Rapid Application Development, Object Orientation and Object Oriented Programming is explained. • Object-oriented programming is described in terms of the re-use of classes and the implementation of objects. • Examples of object-oriented programming languages are listed.	• Explain the relation between Visual programming, Rapid Application Development , Object Orientation and Object Oriented Programming • Explain object-oriented programming in terms of the re-use of classes and the implementation of objects. • List examples of object-oriented programming languages.
SUBJECT OUTCOME	
Name and discuss basic steps in developing a computer program.	
ASSESSMENT STANDARDS	**LEARNING OUTCOMES**
• The basic steps to develop a computer program are named. • The basic steps involved in a computer program development cycle (PLDC) are briefly discussed. *Range: Define the problem, analyse the given Problem, design a solution, code a solution, debug and test the solution, implement the solution*	• Name the basic steps for developing a computer program. • Discuss briefly the basic steps involved in a computer program development cycle (PLDC).

SUBJECT OUTCOME	
Describe software development tools.	
ASSESSMENT STANDARDS	**LEARNING OUTCOMES**
• Examples of software development tools are named. • Software development tools are briefly described.	• Name examples of software development tools. • Briefly describe these software development tools.
ASSESSMENT TASKS OR ACTIVITIES FOR TOPIC 2	
• Class tests • Discussions	• Group work • Assignments

Topic 3: Computer Data Storage

SUBJECT OUTCOME	
Demonstrate an understanding of computer data types.	
ASSESSMENT STANDARDS	**LEARNING OUTCOMES**
• The demonstration distinguishes between data types and includes examples. • The description of the use of coding systems in a business environment distinguishes categories of coding systems and includes examples. • The demonstration illustrates how data manipulation operations are performed on data types.	• Distinguish between data types and their examples. • Distinguish categories of coding systems and their uses in a business environment. • Explain and illustrate how data manipulation operations are performed on data types.
ASSESSMENT TASKS OR ACTIVITIES FOR TOPIC 3	
• Class tests • Discussions • Group work	• Assignments • Practical tests

Topic 4: Basic Computer Programming

SUBJECT OUTCOME	
Describe the term problem solving	
ASSESSMENT STANDARDS	**LEARNING OUTCOMES**
• The description provides an appreciation of the steps and techniques of the problem solving process. *Range: Understand the problem, devise a plan, carry out the plan, review the solution, apply changes and test and implement the plan, theoretical problems solving without referring to a specific programming language*	• Name and describe the steps and techniques of problem solving.
SUBJECT OUTCOME	
Produce and document an algorithm	
ASSESSMENT STANDARDS	**LEARNING OUTCOMES**
• An algorithm is defined and its use is explained. • Inputs, processes and the desired outputs needed to construct an algorithm are identified. • An IPO chart is drawn for a given problem. • The description identifies the algorithmic structures needed to produce a feasible algorithm to solve a given problem. *Range: Sequential, selection and iteration*	• Define an algorithm and explain what it is used for. • Identify inputs, processes and outputs needed to construct an algorithm. • Draw an IPO chart for a given problem. • Identify the algorithmic structures needed to produce a feasible algorithm to solve a given problem.

SUBJECT OUTCOME	
Produce and document pseudo-code for a given problem	
ASSESSMENT STANDARDS	**LEARNING OUTCOMES**
• Pseudo-code is defined and its use is explained • The difference between an algorithm and pseudo-code is indicated with reference to the level of detail involved. • A given problem is solved by implementing logically correct program and problem solving constructs using pseudo-code. *Range:* *sequential structure with reference to variables assignments and numerical expressions* *Decision structures with reference to simple if statements and Boolean conditions and relational operators(bigger as and smaller than equal and not equal to, NOT, AND OR* *Simple if then else statements nested to a maximum of two levels.* *Simple case statements* *Iteration structures with reference to simple pre-condition, post condition and fixed condition loops excluding nested loops*	• Define pseudo-code and explain what it is used for. • Differentiate between an algorithm and pseudo-code with reference to the level of detail involved. • Produce pseudo-code to solve a given problem by implementing logically-correct program and problem solving constructs and techniques.
SUBJECT OUTCOME	
Produce and implement alternate design methods to document a specification or solution for a given problem	
ASSESSMENT STANDARDS	**LEARNING OUTCOMES**
• Alternate methods for documenting and specifying a solution for a given problem are listed and briefly explained. *Range, flow charts, nassi-schneidermann diagrams, program structure diagrams, decision tables, decision trees ,UML (Actors, Use Cases)* • Alternate methods are used to document a solution.	• List and briefly explain alternate methods for documenting and specifying a solution for a given problem. • Use alternate methods to document a solution.
SUBJECT OUTCOME	
Implement a programming language to solve a given problem	
ASSESSMENT STANDARDS	**LEARNING OUTCOMES**
• An appropriate programming language is used to implement the designed solution. • A program is developed and coded according to the designed solution. • A program is compiled free of syntax and logical errors. • The program is validated using sample data.	• Use an appropriate programming language for implementing the designed solution. • Use the IDE (Integrated Development Environment) of the programming language to write the source code according to the solution designed. • Compile and debug the developed program for syntax and logical errors. • Test the correctness of program using sample data.
ASSESSMENT TASKS OR ACTIVITIES FOR TOPIC 4	
• Class tests • Discussions • Group work	• Assignments • Practical tests

Topic 5: Principles of Computer Program Quality Assurance and Project Viability

SUBJECT OUTCOME	
Describe the basic principles of program quality assurance	
ASSESSMENT STANDARDS	**LEARNING OUTCOMES**
• The description identifies good program documentation principles. *Range (at least three): General readability, meaningful variable names, indentation and program comments* • The description identifies programming quality assurance (QA) principles. *Range: Syntax checking, test data and test plan* • The description distinguishes between validation and verification.	• Explain the principles of good program documentation. • Explain the principles of programming quality assurance (QA). • Distinguish between validation and verification.
SUBJECT OUTCOME	
Describe the principles used to determine project viability	
ASSESSMENT STANDARDS	**LEARNING OUTCOMES**
• The explanation provides an evaluation of the viability of developing computer programs to solve problems and identifies the critical issues in the assessment of the viability in terms of the programs design. *Range: Processing (Batch , Online, Direct),* *User interface type (Keyboard or Mouse Driven, Console or Visual)* *Possible expansions and enhancements to the solution.*	• Explain how to evaluate the viability of developing computer programs to solve problems. • Identify the issues involved in assessing the viability of developing computer programs in terms of its design.
ASSESSMENT TASKS OR ACTIVITIES FOR TOPIC 5	
• Class tests • Discussions	• Group work • Assignments

4 SPECIFICATIONS FOR EXTERNAL ASSESSMENT IN INTRODUCTION TO SYSTEMS DEVELOPMENT – 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
	40%	40%	20%