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The purpose of this handbook is to make available all the necessary material to carry out assessment in an efficient and systematic way at Nizwa College of Technology. It serves as a platform in which the tutors can develop and implement various assessment strategies offering a wide range of possibilities for the students to fine-tune their skills and bridge the gap. This handbook supports and encourages such developments. In so doing, it reflects the College’s commitment to providing students with a high quality learning experience allowing them to learn and getting assessed simultaneously.

Consequently this document provides a digest of the relevant College policies and procedures relating to assessment, along with guidance on the design and use of assessment methods and tools.

The first section of the document seeks to draw together the purpose and principles of assessment procedures within the College. The second section of this document offers a range of techniques and suggestions to enhance the assessment process.

The third section outlines the elements that ensure quality in the assessment process. The forth section presents the college guidelines and specifications relevant for all assessment processes. The fifth section provides the policies governing the whole of assessment at Nizwa College of Technology, thus combining elements of all relevant resources into one convenient and comprehensive guide.

Special thanks are due to all the Head of Departments, Head of Sections, and Staff of the academic departments for their valuable comments to hone this handbook. All suggestions to improve this handbook are welcome and would be duly incorporated during revisions.

Dr. Bader Ahmed Al Khatib. Assistant Dean of Academic Affairs
Rajesh Kumar B, Lecturer, Engineering Department.
Chapter 1

Introduction to Assessment

1.1 Objectives

The objective of the assessment of learning is to measure the outcomes students have achieved and to discover what a student really knows. It should measure not just the amount of content students know, but the extent of their understanding, their ability to correlate the concepts to different situations, and their ease in transferring knowledge to new situations.

The assessment gives students useful feedback on what they know and how they can learn better, and lets the instructor see in what areas students are struggling.

Learning assessment is a mutual process interrelated with the assessment of teaching. It is not just offering grades to students based on tests, papers, and other assignments, but it is a continuous process that provides insight into student learning and gives teachers a basis for making instructional decision and modifying teaching methods.

Assessment data affects student advancement, placement, and grades, as well as decisions about instructional strategies and curriculum (Herman & Knuth, 1991).

1.2 Principles

- Assessment of learning should be an integral part of the teaching and learning plan. The assessment plan should include strategies to make the students understand the learning objectives and the criteria with which it will be measured at the beginning of the course.
- Assessment of learning should provide the students with the constructive feedback about how they can improve by identifying their strengths, weaknesses and providing opportunities to improve. The teacher should share with the students with the insights discovered after each assessment like student struggles, misunderstandings, common questions etc.

- Assessment of learning should measure students' attainment of learning outcomes.

- Assessment of learning should measure the level of student success.

- Assessment of learning should be designed to obtain feedback to the teacher about the assistance; students might need to improve shortcomings, areas to be covered in greater depth and possible adjustment in the teaching style.

- Assessment of learning should be on-going endeavor – something teacher can and should do, in various forms, for the duration of the course.

- Assessment of learning should ensure connection between the method of assessment and the way students learn the material.
2.1. Skills and its assessment

Any assessment measures the attainment of certain skills required to achieve a program’s objective. Assessment at NCT aims at assessing multiple skills of the student including theoretical and practical skills. According to Bloom’s Taxonomy of Cognitive skills[^1^], the various skill levels are:

Knowledge – the ability to recall information which could be assessed with keywords like show, define, list, select, who, when, where, examine etc.

1. Define acceleration.
2. Who is the father of medicine?

Comprehension – the ability to understand information, the ability to integrate and interpret information into a new context which could be assessed by keywords like explain, illustrate, describe, paraphrase, generalize, summarize etc.

1. Summarize the idea of the whole passage in 3 sentences.

Application – the ability to use concepts, notions and ideas to new situations, the ability to solve problems which could be assessed by keywords like apply, solve, modify, demonstrate, examine, calculate, change etc.

1. Calculate the velocity of sound when a thunder is heard 3 min after, at a distance of 30000 ft from the ground.

Analysis – the ability to identify variations, the ability to organize various sections of a common idea, the ability to recognize the patterns, the ability to compare and contrast ideas, the ability to separate parts from a whole thing, the ability to analyze the relations between various parts which could be assessed with keywords like classify, arrange, compare, differentiate, relate, separate etc

1. Compare a digital camera with a camcorder.
2. Interpret the results of the above experiment?
Synthesis – the ability to obtain a whole thing by joining different parts, the ability to combine various processes to obtain a new concept which could be assessed with keywords like build, design, construct, form, compose, compile, generate etc.

1. Write a computer program to...?
2. Build a useful component from the scrap available in the workshop.

Evaluation – the ability to judge the value and suitability of a particular concept in a given situation, the ability to make choices based on arguments, the ability to appreciate evidences which could be assessed with keywords like assess, decide, criticize, evaluate, judge etc.

1. Assess the suitability of a job position to your skills.

The following skills are also assessed in practical courses.

Procedural Skills - the ability to identify a sequence of relevant operations to achieve a good functionality of a tool, machine or equipment. This includes

1. Selection of suitable tools / apparatus / instruments.
2. Knowledge of limitations of the tools / apparatus/instruments regarding their size, ratings, specifications, accuracy etc.
3. Assembly, dis-assembly and adjustments to the apparatus.
4. Handling the tools /apparatus/instruments according to Health and Safety norms.
5. Efficient and accurate operational levels.

Manipulative Skills - the ability to handle the tools and machines suitably for good results of the product.

Observational Skills - the ability to observe the changes that occurs during an experiment.

1. Reading the scales/ instrument correctly.
2. Noting physical and chemical changes of the specimen during the experiment.
3. Reading graphs and charts correctly.
4. Responding to significant changes during the course of the experiment.
**Drawing Skills** - the ability to represent information in a pictorial way by manual and computer assisted methods.

1. **Drawing tables for observation.**
2. **Drawing schematic diagrams, flow charts, circuits and graphs.**
3. **Labeling the parts correctly.**
4. **Obtaining multidimensional views.**

**Reporting and Interpretative Skills**

1. **Planning and recording observations.**
2. **Performing necessary calculations using appropriate symbols and units etc.**
3. **Interpreting and drawing conclusions from the calculations.**

### 2.2 Procedure for Assessing Student Learning

Generally, learning assessment includes two parts, see Fig 1. The first is continuous formative assessment without grading which gives a feedback on the nature and progress of student learning and at the same time on the teaching process. The second part is summative assessment (with grading) which is usually done after and in coordination with the formative one.

![Assessment of Learning Diagram](image)

**Fig 1. The procedure of assessment of students learning**
2.2.1 Formative Assessment

This method gives both teachers and students feedback on the nature and progress of student learning. It involves everything from pre-assessment to the many ways of collecting data about student understanding. This type of assessment technique is not used to assign grades, but rather a sense of what students have mastered and where they are struggling.

The aims of this assessment can be summarized in the following:

- To allow students to revisit or revise their work before moving on to a new topic
- To make student thinking visible both to teacher and other students
- It can be used to inform instructional practices- to give student advice without their worrying about grades.
- It helps to assess both the students and the instructor.
- It allows students to monitor their own progress throughout the course.
- It allows the teacher to review or teach from another perspective.
- To monitor the student understanding before any grades are assigned.

2.2.1.1 Formative Assessment Techniques

Formative assessment techniques are quick and easy ways for a teacher to gain a sense of how and what students are learning; students are able to reflect on their learning and they will be able to make adjustments in the delivery to meet the learning goals.

These techniques might be applied at regular intervals throughout the course – weekly, after each class or each unit, etc. – perhaps in coordination with summative techniques. Since the teacher will not be grading responses, and because anonymous feedback is often more candid, allowing for anonymity can be useful. Finally, the questions you ask should be focused on student learning ("What have you learned?") rather than on your teaching ("What do you like best about my teaching?").
The following techniques are drawn from a book on classroom assessment by Thomas Angelo and K. Patricia Cross, Classroom Assessment Techniques (1993).

i) Background knowledge probe

Use multiple choice or short-answer questions to assess the level of students' prior knowledge on the subject matter of the course. Doing this at the start of the course will help you gain a sense of misconceptions and the degree of relevant knowledge.

ii) One-minute paper

Allow for two or three minutes before the end of class and ask students to respond, on a half-sheet of paper, to the following question: What was the most important thing you learned in this class today? You may also ask: What question remains unanswered (or is unclear) from class today? This gives you a sense of how students' understanding of the class is similar to, or different from, your goals.

iii) The Muddiest Point

This, assessment method is similar to the minute paper. Students write a one-minute essay on the muddiest point that remains in their minds after a lecture, demonstration, or presentation.

iv) One-sentence summary

Ask students to summarize the "how, what, where, when and why" of something (an event, a chemical process, a story plot, etc.) in one, clear grammatical sentence. This gives you a sense of their ability to analyze and synthesize information in a concise format.

v) Directed Paraphrasing

In directed paraphrasing, students summarize a concept or procedure in two or three sentences.

vi) Application cards

Here, the instructor asks students to think of real-world applications of topics discussed in class. When using these strategies in class, make sure you tell your students that you are not grading the responses, but trying to get a feel for their understanding. Asking students to reply anonymously may help dispel any anxiety. After you have collected the
responses, read them carefully. If you don’t have time to closely analyze responses, at least do a quick tally to see if the same muddy points or questions keep coming up. Or sort responses into piles that represent students who seem to get it and those who don’t. Share what you’ve learned with students, and change what you do in class accordingly.

vii) Student-generated test questions

Have students prepare two or three test questions with model correct answers. You will be able to see what students believe the main ideas of the course are, what they believe are fair test questions, and what is their ability to answer the questions.

viii) Pro-con grid

Have students create two columns and generate a list of pros and cons on a particular topic. This process helps students see multiple sides of contentious issues and gives you a sense of their depth of understanding.

2.2.1.2 Guidelines for Improvement

The techniques mentioned above are mostly paper based thus require more time and effort by the teacher/instructor to check and analyze. It may be applicable for classes of small size. A proposal [3] is suggested to widen the assessment techniques. It is based on raising a variety of oral questions in the class after every point or a topic. That is to hold a dialog and discussion in the class through questioning to get the feedback on the students’ understanding and the method of teaching. Even if no or only few students participate in answering, for others it will be very much helpful to learn and understand more.

The important thing is that the teacher/instructor should not give answers; he/she has to wait a while to allow students to think, link and answer, also to avoid using only classical questions like, did you understand?, or is it clear?, or do you have any question? Better the teacher/instructor has to start probe questioning. He/she should be able and has the skills to raise unlimited type and number of questions.

Types of questions with examples can include a combination of the following: (some types are derived from [3]):
i) Informative Questions
These questions allow the students to get useful information about the topic.
“Questions about the meaning of new terminology”
“What is the important point of …?”
“How to remember?: rule, formula, unit, etc.”

ii) Application Questions
These questions require the students to engage in a discussion of the relationship of facts to their application in some suitable environment.
“How does……apply to ……?“
“Can you give an example/s on …?”
“What is the use of ……?”

iii) Reasoning Questions
Such questions let the students understand some logics and reasons behind main elements of the topic.
“Can you find why ……?”
“What is the reason for …?”

iv) Comparative Questions
Comparative questions require comparison between items such as cases, theories, opinions, methods, etc.
“What is the difference between……?”
“What do these …… have in common….and how do they differ?”
“Which is better …….?”

v) Connective Questions
These questions allow the student to make a connection between matters not obviously related.
“Can you relate ……?” or “How does…..relate to ………?”

vi) Critical Questions
Critical questions present the students with an alternative interpretation or point of view, and require the student to demonstrate familiarity with the original material.
“How can one justify…..?”
vii) Evaluative Questions
These questions are a combination of fact and assessment. In addition to the factual response, the student is asked to present an opinion or assess the response in terms of some value.
"Which point of view is more relevant to the discussion of.....?"

viii) Factual Questions
These are sometimes needed to set a base line for discussion. One way to avoid competitiveness and a 'I am smarter than you' attitude is to use brainstorming techniques.
"What are some of the conditions that led to.....?"

ix) Interpretation Questions
These questions allow the student to interpret information while maintaining credibility.
"How can one decide that...?.....is the best way to .......?"

x) Problem Questions
Problem questions can be limited to a very simple issue, or can be complex in nature. It is important to state the problem clearly, even when complex, so that students can focus attention on the desired elements.
"How to find ..... ?"
"If the conditions are.....what would be some of the possible outcomes...?"
"What happens if.......?"

2.2.2 Summative Assessment

Commonly used in the form of tests, papers, and other assignments (Paper-pen assessment). This method should be used after and in coordination with the formative one.

Summative assessment helps the teacher to
- Forms a basis for grading the students
- Check the degree to which the students have achieved the course objectives
- Identify and understand students difficulties for remedial measures
- Take corrective action and reflect on the method of delivery

Test serves as a measure of student's ability to apply their knowledge and solve the problems.
2.2.3 Summative Assessment Techniques

2.2.3.1 Improving Test Questions

How good is a test if it does not accurately measure what it is intended to measure? Every type of test has its own strengths and weaknesses. It is the discretion of the teacher to choose the question formats that can best do the job of measuring the skills and knowledge they want to evaluate. A good test uses a mixture of the formats discussed in the sections that follow.

2.2.3.1.1 Multiple Choice Questions[^5][^6]

It consists of two parts (i) The stem (ii) The options.

**Example**

**Stem:** Which of the following happens when there is an increase in temperature?

**Options:**

- A. Increase in the viscosity of a liquid.
- B. Decrease in the viscosity of a gas.
- C. Increase in the viscosity of a gas. → Correct
- D. Decrease in the density of a liquid.

**Strengths**

1. A greater number of learning outcomes could be assessed in shorter duration
2. Guessing minimizes when compared to True / False type questions.
3. Reduces the amount of scoring time for tutors without compromise in efficiency and accuracy.
4. Marks are highly reliable

**Weaknesses**

1. Difficult and time-consuming to develop convincing distracters in this item.
2. In-depth understanding of the students cannot be measured.

**Guidelines for writing a good multiple choice question**

1. The tutor should decide between a correct answer format and a best answer format multiple choice question. While the correct answer format includes options with only one correct answer, the best answer format can include options which can all be correct but one of them is clearly the best.
2. The options have to be listed vertically rather than horizontally below the stem of the question.

3. Whenever possible, a multiple choice item should be a direct question instead of an incomplete statement.
   Undesirable: The relation between voltage and current is
   Desirable: Which of the following equations relate voltage and current?
   Undesirable: A market segmented on the basis of loyalty status is an example of
   Desirable: Which of the following markets is segmented on the basis of loyalty status?

4. The words that could be repeated in the options can be included in the stem.
   Undesirable: What is the use of a search-engine?
   A) Search for websites.
   B) Search for network.
   C) Search for internet for specified keywords.
   D) Search for protocol.
   Desirable: Which of the following would a search-engine search for..?
   A) Websites.
   B) Network.
   C) Internet for specified keywords.
   D) Protocol.

5. The usage of negatives like "not" or "except" should be avoided. If used in the stem of the question, negative words should be emphasized. The inclusion of negatives in both the stem and the options should also be avoided.
   Desirable: Which one of the following is NOT a cyber crime?
   A. Anonymity
   B. Copyrights violations
   C. Computer fraud and abuse
   D. Interception

6. All the options should appear valid to unskilful students to prevent any guesswork.
   Example: Which of the following equations define a function with independent variable $x$ and domain all real numbers?
   a) $x^3 + y^2 = 25$  b) $x^3 - y^2 = 5$  c) $y^2 - x^2 = 9$  d) $y^2 - x^4 = 10$
7. Pictures, graphs and line diagrams could be used as options to assess multiple skills. 

Example: Which of the following graphs represents the flow of a non-newtonian fluid?

\[ \text{Shear stress} \]
\[ \text{Shear stress} \]
\[ \text{Shear stress} \]
\[ \text{Shear stress} \]

\[ \text{Velocity gradient} \]
\[ \text{Velocity gradient} \]
\[ \text{Velocity gradient} \]
\[ \text{Velocity gradient} \]

8. There should not be grammatical clues including verbal & article connections in the stem of the question

Undesirable: The effect of an exterial force can be balanced by the action of an

A) Internal force
B) Shear force
C) Tensile force
D) Compressive force

With "an" in the stem, the answer can be spotted easily.

9. Multiple choice questions assessing just the memory of the students should be not designed.

Undesirable: Which of the following is the value of atmospheric pressure?

A. 1.01325 bar.
B. 1 KPa.
C. 10 N/m²
D. 10mm of mercury.

10. As far as possible, all the options should be of same length.

11. Usage of funny, non-sense and useless options should be avoided.

12. Statements directly lifted from the text book should be avoided.

13. Usage of extreme words like never, always, often, seldom should be avoided.

14. "All of the above" option should be avoided. If the student identifies two correct options, this question can be easily answered.

15. "None of the above" option should be avoided. If this option happens to be correct and when the student selects it, the tutor cannot ensure whether the student knows the correct answer.
16. Multiple choice format usually checks higher level of thinking. Tutors could use this format to design challenging questions. Also greater the similarity between the options, the difficult the question is.

17. This format should not be used when only a few distractors could be developed.

18. The correct options should be randomly distributed having the same proportion of a, b, c and d throughout the section.

19. The distracting options should be familiar to the students. They should not be made technically complicated. It is sensible to include the errors students usually make, as distractors.

2.2.3.1.2 True or False Questions

The questions in this format pose as declarative statements which the student has to identify as correct or incorrect. This question is used to assess the students' skills to identify cause-effect relationship

Example

A "Network Based IDS" watches for questionable activity being performed over a network medium. True / False

Strengths

1. A wide range of learning outcomes could be assessed in shorter duration.

2. Reduces the amount of scoring time without compromise in efficiency and accuracy.

3. Marks are highly reliable

4. The student has to read less compared to a multiple choice question.

Weaknesses

1. Question can be developed only when there are two possible alternatives.

2. This format is influenced by high chances for guesswork.

3. False statement do not assess whether the student knows the correct answer.

Guidelines for writing a good True or False question

1. The statements should be simple, specific and short.

Undesirable: In a flow through a pipe, the flow rate at the exit will be more than the flow rate at the entry when the diameter of the exit is smaller than the diameter of the entry. True / False.

Desirable: In a flow through pipe, the flow rate depends on the size of the entry and exit of the pipe. True / False.
2. The statements in this format should be either absolutely true or false with no exceptions.

3. Inclusion of terms like "all," "always," "none," "never," "impossible," "inevitable," etc. in the statements make them appear more likely to be false. On the other hand terms like "usually," "sometimes," "often," etc., would make the statements appear more likely to be true. These terms aid the guessing of the students and should be avoided.

4. These questions should be equal in number.

5. The answers should not follow a specific pattern (T,T,F,F or T,F,T,F). This could rather increase the tendency of the students to guess than to think.

6. Statements should never be taken directly from the lecture notes or textbooks.

7. Negative statements should be avoided.

Undesirable: Moniker cannot distinguish one instance from another of the same class. True / False.

Desirable: Monikers can distinguish one instance from another of the same class. True / False.

8. Statements based on pictures, graphs can also be developed

Example: The direct stresses in the Mohr's circle shown below are both tensile. True / False

9. Use of ambiguous statements should be avoided.

Undesirable: Friction inside large pipes is more. True / False.

"Large" in the above question creates an ambiguity as it may mean both length and diameter.

Desirable: Friction inside pipes of greater length is more. True / False.

Undesirable: According to the security experts 50 to 60 percent of attacks originate from the organization. True / False.

Here it is not clear whether the attack is from 'within' or 'outside of' the organization.

Desirable: According to the security experts 50 to 60 percent of attacks originate from within the organization.
2.2.3.1.3 Completion Questions[8]
This format is popularly known as "Fill the blanks". A statement with a missing word will be provided and the students have to complete it.

Example:

_________________ is a device which converts electrical energy to mechanical energy.

Strengths

1. A wide range of learning outcomes could be assessed.
2. Reduces guesswork when compared to multiple choice and true/false questions.
3. Scores are highly reliable.

Weaknesses

1. Spelling mistakes, poor hand writing poses challenge to this format
2. Sometimes measures the memorizing ability of the student
3. If poorly designed, can have more than one answer.

Guidelines for writing a good completion question.

1. If possible, only one blank should be provided in the question. Two or more blanks can be included only when the answers to all of them form a series.

Undesirable: _______ law is obeyed only in the _______ region of the stress-strain diagram.

Desirable: Hooke's law is obeyed only in the _______ region of the stress-strain diagram.

Desirable: In direct marketing, marketers make a huge database of consumer on the basis of the customer's ________, ________ or ________ profiles.

The primary colors are ________, ________ and ________.

2. The length of the blanks should be same throughout the section without providing any clues about the length of the answer.

Undesirable: The primary colors are ________, ________ and ________.

Desirable: The primary colors are ________, ________ and ________.
3. Grammatical clues should be avoided.

_Undesirable:_ Two shafts of same length, one hollow and one solid, transmitting equal torque should have an ____________ polar modulus.

4. The statement should be designed to have only one answer.

_Undesirable:_ The effect of a force depends on ____________. (Line of action, point of application, direction)

5. The blank should contain the main idea of the statement. If possible, the blank should be provided at the end of the statement after defining the problem clearly.

_Undesirable:_ The unit of ____________ is same as that of pressure.

_Desirable:_ The unit of pressure is same as that of ____________.

6. Statements taken directly from the lecture notes or handouts should be avoided. They could be easily memorized.

2.2.3.1.4 Descriptive Questions[8]

This type of question requires the student to answer with appropriate words. This type could be utilized while assessing the ability to recall information, the ability to solve computational problems, the ability to represent a scheme of idea in writing as well as drawing, the ability to organize, integrate and interpret the information etc. They focus on broad issues, general concepts, relating facts, comparing data etc.

**Strengths**

1. A wide range of learning outcomes could be assessed.
2. No guessing is involved.
3. Less time is required to design this question.
4. Provides opportunity to express one’s learning in own words.
5. It can measure almost all the cognitive levels of learning.

**Weaknesses**

1. Scoring takes a lot of time
2. There can be complaints from the students regarding the subjectivity of scoring.
3. The reliability of this format is very low.
4. Encourages the student to fake answers.
Guidelines for writing a good descriptive question

1. This type of questions should be used to measure outcomes that could not be measured by other formats.

2. The language skills of the students should be kept in mind while designing this type of questions.

3. It is better to suggest the page limits or the word limits for this type of questions.

4. Instead of one long generic question, two or more specific questions in the same outcome can be given.

   Undesirable: Explain the reciprocating pump with a neat sketch.
   Desirable: For a reciprocating pump, discuss briefly the following
   (i) Construction (ii) Principle (iii) Working (iv) Advantages and Restrictions
   (v) Applications

5. Some skills which could be assessed by these descriptive questions are demonstrated with examples (Ebel, 1979 and Linn & Gronlund, 2000) are listed below:

   Show understanding, explain
   Explain in your own words what is meant by . . .
   Why did the . . .

   Compare and/or contrast
   Describe the similarities and differences between . . .
   Compare the following/attached two methods for . . .

   Classify, organize, or arrange items in sequence
   Group the following items according to . . .
   What do the following items have in common?

   Predict, recognize cause and effect
   What are the major causes of . . .?
   What would be the most likely effects of . . .?

   Infer
   What is most likely to happen when . . .?

   Apply principles
   Using the principle of . . ., describe how you would solve the following problem situation.
   Describe a situation that illustrates the principle of . . .
Analyze
Describe the reasoning errors in the following paragraph.
List and describe the main characteristics of . . .

Synthesize, integrate data from multiple sources
Describe a plan for proving that . . .
Write a well-organized report that shows . . .

Justify, formulate relevant arguments and validate conclusions, organize data to support a viewpoint
Which of the following alternatives would you favor, and why?
Explain why you agree or disagree with the following statement. . .
Write a letter to the higher officials to get increased funding for school computers.

Summarize
In your own words, summarize . . . .
State the main points included in . . .
Briefly summarize the contents of . . .

Generalize
Formulate several valid generalizations from the following data.
State a set of principles that can explain the following events.

Evaluate
Describe the strengths and weaknesses of . . .

Create an original solution or procedure
List as many ways as you can think of for . . .
Make up a story describing what would happen if . . .

2.2.4 Student Participation Assessment

There is no doubt that assessment of students' participation inside the class could lead to a better learning and better student performance. This assessment plays an important role in creating more dynamic and live class. It is true that the tutor can keep the class dynamic and live by his way of teaching, however with incentives given to students (grading of their participation) for sure it leads to more attentiveness, more interaction, more communication, more listening, more in-advance preparation to class, encourages discussion, argumentation, substantiation of own views, new ideas, better use of learning tools, etc and finally it results in better learning and understanding. In general it creates environment of encouragement, motivating and competition among students.
The aim of the assessment could be summarized by the following:

- having more dynamic and live class
- motivating, encouraging and creating competition among students
- increasing the attentiveness and ability to listen
- improving attendance of students to classes
- increasing in-advanced preparation for the class (at home)
- encouraging students to use their learning tools effectively, e.g. calculators, dictionaries, e-learning portal, etc.
- increasing the interaction and communication
- encouraging group discussion inside class or through e-learning portal-forum discussion.
- provide opportunity for speaking and enhancing persuasive skills
- encouraging substantiation of own views and new ideas
- giving opportunity for responding to other views
- providing better class environment and better learning.
- Reducing opportunity for mess and chaos in classroom.
- providing the tutor with a clear picture about the conduct of each individual student for further actions to help weak students.

2.2.4.1 Assessment Methods in Class participation
There is variety of methods for encouraging class participation. The suggested assessment scheme proposes the following areas of assessment with some details on how to do it:

2.2.4.1.1 Answering oral questions
Asking oral questions is the most used method in class to check students' understanding [5], however not all students usually participate in answering. Almost same students answer every class repeatedly. But with the suggested assessment scheme, once the students realize that there will be some marks for answering the general raised oral questions some will start to think to participate. In the process of developing this
suggested scheme of assessment, some staff advised to give half the marks even for students giving wrong answers! just for encouragement, see Appendix III.

2.2.4.1.2 Answering questions given to a specific selected student/written questions to all.
Since the oral method of questioning does not ensure all students to participate, this method can be used to encourage a particular student to answer. A question could be raised to a particular student selected randomly.
Questions could include: solving a problem on the white/black board, meaning of terminology, doing calculations using calculator, giving interpretation/giving a reason, linking/synthesizing information, giving a procedure, drawing a diagram/sketch, stating a definition/law, rephrasing/summarizing, explaining a point, giving examples, making sentence, etc.
The written questions method can be used for all students. The tutor can distribute papers at the beginning of the class with few simple questions related to the main important topics of the material being taught. Time is kept open for students to answer during the whole class period. Answer scripts can then be collected back at the end of the class. Different sets of question/papers could be used to avoid malpractice. This method keeps the students attentive all the time to the tutor to look for answers. The method may lead students to look after the answers from the handout/textbook inside the class, why not if they succeed. Then the tutor should be able to give questions with indirect answers. So is a good way to push students to use the course resources. In such cases, it is advisable to create awareness among students to prepare for the class in advance so as to be able to get the answers easily and quickly.

2.2.4.1.3 Creative volunteering participations
This class-participation could include initiatives, useful information, asking important questions, substantiation of own views, logical argumentation, responding intelligently to other views and giving new ideas. It is expected that very few students have the ability and talent to play role in this area, however they do really need to be assessed positively among their colleagues, first they deserve and second to encourage others to take part.
2.2.4.1.4 E-Learning forum participation

Group discussion inside the class is another form of participation which needs to be motivated by assessment, however whatever discussion held in one group is not visible to other groups and sometimes the class period is not enough to hold such activity also it is not easy for the tutor to follow-up and assess every one in the groups.

The e-learning forums provide the same facility with three advantages; the first is that it is accessible to all, all students can see what others do and the second is that the discussion is open without any limitation of time. The third is that the tutor can easily identify who is leading, who is participation more effectively, who is raising questions, who is giving good answers, etc. Thus the assessment of such activity becomes easier and time free.

2.2.4.1.5 Attendance

Attending classes regularly is a crucial factor in the learning process, otherwise there will be no need for a tutor and classes. Increasing the percentage of attendance depends on several factors. One of these factors is its assessment as a class participation activity, i.e. to motivate students who regularly attend and let others feel that they are losing more than what is stated in the bylaws. The assessment has to be done according to the percentage of attendance.

2.2.4.1.6 Disruptive participation

No how, in every class there will be some students who try to disturb or misuse the opportunity of the class-participation assessment. For such cases negative grading could be used to discourage any disruptive or discourteous action like vague, repetitive, unrelated and disrespectful responses. Anyway, this negative assessment is recommended to be applied only in very critical situations and after exhausting channels of sympathy. It can then be cancelled later if the student performance is improved.

2.2.4.2 How to Assess Class Participation

The class-participation assessment is suggested to carry between 5 to 10% of the course work assessment. In the literature, 15% is used as done by Brown University [6]. In the following sections, the procedure, the grade weight to each area of assessment and the assessment sheet will be explained.
2.2.4.2.1 Class-participation assessment procedure

Following are the guidelines for the class participation assessment procedure:

- Class participation assessment sheet similar to the attendance sheet has to be prepared and used as a record, see Appendix.
- The assessment of oral participations have to be ensured for a number of students in each class period (starting two weeks from the beginning of the semester) and this to be repeated every/press class for other students. By this way, the problem of assessment of sections with large number of students can be solved. Each time the tutor can assess for example 5 different students in each class period.
- Equal assessment opportunities have to be ensured for all students.
- Assessment is preferable to be done in points, 10 points each time with a weigh based on the answer of the particular student.
- Each area of assessment has to be given a weight based on its importance and the points could be distributed accordingly, see the proposal as clarified in Table 1.
- The total mark of the assessment during the whole semester can then be scaled down to the 5-10% as shown in the assessment sheet, Appendix.
- Students have to be informed that they should be ready for class participation and they will be rewarded for that activity. They need to know that sometimes questions for participation may be asked to particular student/s without specifying names in advance.

2.2.4.2.2 Start of Class-Participation Assessment

Some students can be assessed from the first class, however to take into consideration different levels of students especially slow learners, it is necessary first to increase the awareness of students about the importance of class participation and its assessment and second to do formative assessment [4] (assessment without grading). The latter will give measure about the students understanding and encourage them to participate. It also gives feedback on the staff teaching and necessary actions for improvement. As suggested in the procedure above, it preferable to start the assessment two weeks from the beginning of the semester or as decided by the tutor when the students are ready.

2.2.4.2.3 Class-Participation Assessment Sheet

Table 1 below shows the areas of assessment and the weight given to each in terms of percentage, number of times of assessment, points and the marks for each. The table is made assuming the class-participation assessment to carry 10% of the class work. The number of areas of class participation activities, the grading, total percentage and the...
number of times & percentage of each area of assessment is arguable, however this can be kept open.

The weight of some areas of assessment can be altered based on the nature of the course and the methods of its delivery, likewise some other areas can be included and then the weighing table can be adjusted correspondingly. What is given in table 1 is just a proposal, it can be changed by the tutor based on the importance of each area, he/she may change to give more or less weight. The whole class-participation assessment weight of 10% can be scaled down to 5% or up to 15% based on the assessment policy of the college.

The area of “Answers upon call” was given the highest percentage in order to push and encourage students to be ready for the class all the time. It is the only compulsory activity, all others are optional for which not all students are expected to take part. The area of “Attendance” was given a weight of 20% (2 marks out of 10) so as to encourage students to attend classes. It is suggested that students with more than 90% attendance are to be given full points, those with more than 80%, half the points and those with more than last acceptable percentage of attendance (may be 70% attendance), quarter the points.

The last acceptable percentage of attendance is usually mentioned in the attendance policy of college beyond which students are suspended or dismissed. The required class assessment sheet can be designed based on table 1 as given in Appendix. To help filling this sheet, a weekly assessment record could be used, see Appendix. The suggested assessment sheet implies that the tutor has to do the first area of assessment six weeks only during the whole semester with 5 to 10 students asked each time. All other participations could be assessed based on observations.
<table>
<thead>
<tr>
<th>#</th>
<th>Area of Assessment</th>
<th>Details</th>
<th>Weight %</th>
<th>No. of times of assessment</th>
<th>No. of Points</th>
<th>Marks out of 10%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Answers upon call</td>
<td>Question paper to all students during the whole class period or oral question to a particular student. Each student has to be asked orally the same number of times during the whole semester</td>
<td>30%</td>
<td>6</td>
<td>60</td>
<td>3</td>
</tr>
<tr>
<td>2.</td>
<td>Answers to general raised questions</td>
<td>Questions to be raised orally to all students without specifying a particular one. Usually few and same students give answer in most of the classes</td>
<td>20%</td>
<td>4</td>
<td>40</td>
<td>2</td>
</tr>
<tr>
<td>3.</td>
<td>Creative volunteering Participation</td>
<td>Any participation like volunteering information, substantiation of own views, logical argumentation, responding intelligently to other views and giving new ideas</td>
<td>15%</td>
<td>3</td>
<td>30</td>
<td>1.5</td>
</tr>
<tr>
<td>4.</td>
<td>e-Learning</td>
<td>Leading group discussion in e-learning forum, raising questions, answering, helping others, etc.</td>
<td>15%</td>
<td>3</td>
<td>30</td>
<td>1.5</td>
</tr>
<tr>
<td>5.</td>
<td>Attendance</td>
<td>All students with more than 90% attendance are to be given full points, those with more than 80%, half the points and those with more than 70% attendance, quarter the points.</td>
<td>20%</td>
<td>4</td>
<td>40</td>
<td>2</td>
</tr>
<tr>
<td>6.</td>
<td>Disruptive responses</td>
<td>Negative points to discourage any disruptive/discourteous: vague, repetitive, unrelated, disrespectful responses</td>
<td>20%</td>
<td>4</td>
<td>-40</td>
<td>-2</td>
</tr>
</tbody>
</table>

*Not to be applied only in very critical situations and after exhausting channels of sympathy also to be cancelled when student's performance is improved.

Table 1. Weight of Class-Participation Assessment Areas
2.2.5 Laboratory Assessment

Innovative assessment techniques can be utilized in laboratories to help students presenting job-related scenarios and training them to solve them utilizing the skills gained in class room learning. Labs and workshops are ideal settings for providing both participative and cooperative learning environments. Lab reports give the tutors an opportunity to assess students’ writing skills, analytical skills, organizing skills and team skills. There are also many skills that could be assessed in laboratory which may be difficult to assess in theory examinations.

The following guidelines can be followed by the tutor to obtain the best of students’ abilities as well as rich assessment opportunities.

1. The students should be clearly defined about the skills that will be assessed in the laboratory before each and every experiment. The weightage of marks awarded for various criteria should be known to the student.

2. Groups can be randomly formed among the students, during the start of every experiment.

3. The tutor should ensure that every student participate and contribute while doing an experiment as a batch. A student can be penalized for inactive and zero contribution.

4. All the observations from an experiment should be noted down strictly in pen and the student should include the particular sheet in the report without any alterations. Any alterations of the values in the laboratory should be authorized by the tutor.

5. All the experiments should be carried out only by the students after necessary demonstration or explanation of concepts and procedures by the tutor.

6. The procedure to carry out an experiment could be written by a student using his own language in the report. This could present an opportunity to assess the extent of learning and also the report writing skills.
7. If possible, each and every student can carry out the experiment alone and acquire all the required readings. This can also prevent any collaboration between the students after laboratory hours.

8. The time for submission of the laboratory reports is usually before the meet for the next lab. However, it is the discretion of the tutor to decide upon the time for submission.

9. A student who is absent for a particular experiment can carry out that experiment in a week before the final practical examination.

10. The lab report could be assessed for:
   (i) Very good observations, values and calculations.
   (ii) Procedure written in own words.
   (iii) Neat diagrams with labels
   (iv) In-time submission
   (v) Participation in experiments during lab sessions.
   (vi) Graphs and its Inference
   (vii) Good handwriting, presentation & neatness.
   (viii) Writing proper units for physical quantities.
   (ix) Conclusion with justification/s for achieving the objectives.

2.2.6. Workshop Assessment
Assessment in workshops (Electrical and Mechanical) can be carried similar to the laboratory assessment out in a systematic way by the following guidelines

1. The assessment criteria should be made known to the students before the start of any workshop activity.

2. All the markings, measurements, selection of the appropriate tools and machining techniques should be demonstrated to the students.

3. Following which, the Student should work on an individual basis in a workshop assignment.
4. Usually the workshop assignments involving electrical and mechanical operations are assessed at the time when the student is working. However, machined parts which needs measurement of accurate details can be assessed later.

5. The workshop assignment could be assessed for
   (i) Any calculations to arrive at the dimensions of the workpiece or ratings of the electrical components.
   (ii) Accuracy of the dimensions.
   (iii) Finishing of the job.
   (iv) Knowledge of various tools and using it appropriately.
   (v) Knowledge of various machines and operating procedures.
   (vi) Discipline and Awareness of health and safety procedures.
   (vii) Wearing appropriate safety gears.
   (viii) Completion in stipulated time.

2.2.7 Drawing Assessment

The following criteria can be used to assess drawing sheets. These criteria should be disseminated to the students during the induction. They should also be trained thoroughly before applying these criteria.

1. Line Errors
   A. Using Dark (HB) lines instead of Light (2H) lines
   B. Using Light (2H) lines instead of Dark (HB) lines
   C. Drawing Double lines, Over-writing, Lines overlapping.

2. Dimension Errors
   A. Incorrect Arrowheads, without following 3:1 breadth to thickness ratio
   B. Drawing dark dimension lines instead of light lines.
   C. Dimensions incorrect. ie. A line 10mm long is dimensioned as 15mm.
D. Dimensioning method is incorrect, i.e., without following a system of dimensioning.
E. No Dimensions at all.

3. Accuracy
   A. Errors upto 3mm tolerance
   B. Errors above 3mm tolerance

4. Neatness
   A. Improper pencil, equipment usage.
   B. Erasing construction lines.
   C. Dirty.
   D. Improper planning of space, i.e., Drawing gone out of paper borders.

5. Lettering
   A. Lowercase letters instead of uppercase letters.
   B. Lettering not clear.
   C. Lettering using light pencil (2H) instead of dark (HB) pencil.

6. Drawing
   A. Curve not smooth, Irregular.
   B. Curve not passing through the points.
   C. Curve very dark because of over-writing.
   D. Points incorrect.
   E. Incomplete drawing. (Reduction based on percentage of incompleteness)
   F. Irrelevant drawing.

2.3 Academic Integrity in Assessment\[12\]

According to The Center for Academic Integrity (CAI) “Academic integrity is a commitment, even in the face of adversity, to five fundamental values: honesty, trust, fairness, respect, and responsibility”

A majority of the Academic Integrity violations happens during assessment and the course tutor should play a key role in preventing and reporting the violations. The following violations\[4\] can occur.
Examinations and Tests

Impersonation of a student in an examination or test.
Copying and allowing someone to copy.
Use of unauthorized material (including student stationeries)

Laboratories

Copying or allowing someone to copy one’s report.
Using another Student’s data unless specifically allowed by the Instructor.
Fabricating readings to obtain desired objective in the experiment.

Homework, Essays and Assignments

Copying or allowing someone to copy one’s report.
Submission of homework of someone else as one’s own.
Using intellectual works of someone else directly or large sections of paraphrased material without acknowledgment. (Plagiarism)

False or Misleading Representation

Obtaining medical or other certificates to secure attendance.
Altering scored examination papers for false claims.
Submitting false credentials for any purpose.

The Colleges Academic Integrity Policy (Students) outlines the sanctions for all the violations.

2.3.1 How to deal with Plagiarism

Students should be informed scripturally (by writing on the assignment/report cover) within one week from the submission date about the decision and action that needs to be done by the student even if it is to repeat the assignment/report. In general staff members are required to identify and write comments on each individual plagiarism case. Comments could include the violation number, type of plagiarism, action to be taken by the student and decision by staff. The staff also needs to make photocopy of sample cases which have to be kept as record in the course file as this will be used for assessment and analysis for improvement purposes.
In general, plagiarism will be considered in case the acknowledged verbatim material ("in quotes") of the assignment/report is exceeding 20% of the work. Any paraphrased and summarized material should be fully acknowledged using APA manual style. Staff should be clear with students in doing their assignments/reports whether to be on individual basis or in groups so as to avoid students' claim that they have done it cooperatively.

The following sanctions can be imposed on the student who has plagiarized

1. **First time plagiarism** by a student; comment and action by the staff could be

   - Assignment/report fully plagiarized and should be repeated by student’s own efforts.
   - Partial Plagiarism, parts 1, 3, 5, ... needs to be summarized and rephrased.
   - Information given in the assignment/report is not acknowledged, write references and refer to them in content.
   - Still Plagiarism is there in second submission, zero for the assignment/report.

2. **Second time plagiarism** by same student; comments and action by the staff could be

   - Second time partial plagiarism, zero for the plagiarized part.
   - Second time full plagiarism, zero for the whole assignment/report
   - Repeated plagiarism, zero for the whole assignment/report irrespective of partial or full)
3.1 Reliability\[^{[10]}\]

Reliability includes both the consistency of the assessment process to measure the skills of the students over a time and the consistency of the scorer to score the skills over a time. It is to be noted that reliability and validity, both determines the quality of an assessment. As mentioned earlier, validity has more importance than reliability. A process without reliability cannot be valid but a process with reliability can be invalid.

This could be clearly understood with the example of a target board in Fig 4 in which the target board symbolizes the learning outcomes of a course and the darts symbolizes an assessment activity.

Assessment with high validity and low reliability does not mean the difference in levels of achievement of course objectives by students. The difference can be due to a random error in the assessment process.

The closer the dart is to the center of the target, the better the validity is.

<table>
<thead>
<tr>
<th>The assessment measures consistently an objective that is not intended to be measured. Assessment with low validity and high reliability may not measure the expected objectives of the course.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The assessment measures the intended objective occasionally and can be considered valid for a group but it is not consistent.</td>
</tr>
</tbody>
</table>
3.2 Fairness[$^{10}$]

Fairness in an assessment process provides equal opportunities to all students irrespective of their gender and background, to demonstrate their skills. There should not be any bias in the assessment that favors one group over another. In an assessment of writing skills, an essay question about "Cuisine in Oman" could jeopardize the chances of boys scoring better than girls. Boys who have less or no experience in cooking would not get a fair deal in this context of assessment. Here, it can be clearly seen how an assessment of writing skills is affected by the extra knowledge that one group got, favored them to score better than another.

For any assessment task to be fair, its context and content should assess knowledge, value and experiences that are familiar and appropriate to all the students irrespective of ethnic, cultural and racial bias.

Also, an assessment system based on the learning outcomes should equally assess students who have equally achieved the outcomes. In other words, a piece of work submitted by a student satisfying the assessment criteria should have the same marks as a similar work. This can reduce complaints from students claiming that they have received less mark than the other student who has written the same answers. Beliefs unconsciously embedded in a tutor's mind could also threaten fairness in assessment. A past performance of a student can influence current scoring, knowledge of student gender could also influence scoring as there is a general belief that girls are more sincere, hardworking and usually write exams well.

Fairness could be examined and improved by judgmental and statistical methods. Judgmental methods include a panel of experts could examine the assessment process and improve any portions that are unfair. Statistical methods could examine the scores of two different groups for questions considering its difficulty level. Different scores implies
questions that seem to be easy for one group can be difficult for another group. These questions could then be analyzed for fairness.

3.3 Validity\[^{10}\]

Validity is concerned about whether the assessment undertaken by a teacher measures what it is supposed to be measure. It has to be noted that validity takes precedence over reliability. Validity cannot be assumed no matter how reliable the assessment is. This could easily be understood with the example of a scale which measures length consistently (reliable) but an inaccurate (invalid) measure of students understanding in physics. Also, an assessment cannot be deemed valid unless the measurements resulting from it is reliable. Any assessment requires the students to complete some task or activity. However such activity is valid only when

- The assessment comprises items that cover the objective of that specific course. For e.g. it does not assess memory, when it is supposed to measure problem solving (content validity).
- The assessment tries to cover as much of the assessable material as possible, not relying on inference from a small and arbitrary sample.
- The results of an assessment can predict future performance. For e.g. predicting higher diploma performance based on diploma scores (predictive validity).
- The assessment appears like it does measure the construct of interest. For e.g. It appears more valid when a TV program's popularity is measured with the number of viewers than with the number of TV sets switched ON (face validity).
- The results of assessment of a particular course closely match with the results of another related course taken by the same student. For e.g. the results of workshop technology course and the results of manufacturing process of the same student (convergent validity).
- The marks of fluid mechanics exam may not be well correlated with the scores of formal logic (discriminant validity).
4.1 General Guidelines for Summative Assessment

1. An assessment plan should be prepared by each course tutor based on the above with a copy submitted to the HoD and students at the beginning of each semester.

2. Students should be clearly informed about test specifications and methods of assessments and their weightage in a written form (point 1) and orally.

3. Students should know that in case of any authenticity problems like copying of assignments among students, it will be treated strictly; both parties, the student who copied and the one who gave copy will be given zero.

4. Direct plagiarism of topics from the internet will also be treated strictly. The student will be given zero. Students should be encouraged to use their own words, expressions and methods of solution in doing the assignments.

5. Quizzes, home works, reports and mid-term answer papers should be checked in time and returned to students with lecturer’s comments.

6. Checking of answer papers is preferable to be done on a large scale mark so as to reduce discrimination in giving marks, e.g. if the test is out of 20, it is better to check it out of 100, then to reduce it to 20.

7. The lecturer should prepare a model answer for any assessment especially for mid-term and final exam papers. The model answer of mid-term is necessary for persuasion purposes of students while that of the final exam- necessary for checking students’ appeals.

8. The tutor has to inform all students about their learning progress, to inform them about their general conduct in the course and about the marks of the quizzes, HWs, assignments, midterm and other class activities. Students should also know their total mark of the course work at least one week before the final examinations.

9. Students do not have the right to see the marking of the final exam papers. However, they can appeal against the results where specialized appeal committees will check the papers according to article (68) of the Bylaws.
4.1.1 Methods of Summative Assessment

As per the Quality Assurance Manual- QAM and the Bylaws of the college, the methods of assessment could be a combination of the following:

4.1.1.1 Theoretical Courses
a) Course Work (30%)
   i) Class work, attendance & class participation- continuous assessment
   ii) Home works- minimum number should not be less than 2
   iii) Quizzes- minimum number should not be less than 2
   iv) Oral test – to check authenticity of the assignment (very important)
   v) Case study
   vi) Debates
   vii) Presentations
   viii) Team work
b) Mid semester examination (20%)
c) Final examination (50%)

4.1.1.2 Practical Courses & labs
a) Course Work (60%)
   i) Class exercises, attendance & lab/workshop participation
   ii) Reports- min of three reports submitted individually.
   iii) Home works if possible- minimum three
   iv) Oral test
   v) Practical test
   vi) Presentations
   vii) Team work
   viii) Midterm Examination.
b) Final examination (40%)

4.1.1.3 Mixed Courses
Each part is to be treated separately as mentioned above and then the total mark is to be distributed based on the percentage of the theoretical and the practical parts of the course. For example, if the theoretical part represents 70% of the course, then its mark out of 100 should be reduced to 70 (multiply the mark by 0.70), while the practical mark out of 100 is
to be reduced to 30 (multiply the practical mark out of 100 by 0.30). Add the new marks to get the total of the course.

4.1.2 Specifications & Guidelines for summative assessment

4.1.2.1 Guidelines for developing a better test
- The Exam questions should be relevant to the objectives of the course.
- The contents of the exam paper should match and cover all the learning outcomes of the course.
- The contents of the exam paper should measure the level of student’s thinking skills rather than memorizing skills.
- The exam questions should relate to real life & practical applications.
- The structure of the exam paper should have a variety regarding objective, short answer and long answer.
- There should be a balance in distribution of easy, moderate and challenging questions.
- The exam paper should be authentic. There should not be any repetition in test questions in relation to previous exam papers/textbook or handout examples.
- The exam paper should be valid and accurate.
- The exam paper should be appropriate to the level of the students.
- The allotted time to answer questions should be sufficient in a comfortable manner for an average student.
- There should not be any cultural, racial, ethnic and sexual bias in any exam questions. It should not require a presumed knowledge which favors one group over another.
- There should not be any logical pattern for answers that allows the students to guess the answers correctly.
- There should not be any unnecessary clues to the correct answer

4.1.2.2 Guidelines for assembling a test
- There should be a well-defined format and a layout for the exam paper. The headings, pagination, spacing and numbering should be provided.
- The directions and instructions should be clear and simple. The amount of time allowed for the test, the variety of questions, the break-up of the marks and how to record the questions should be clearly mentioned.
• The language used in the exam questions should not be complex and it should be free from incorrect spelling, inappropriate grammar, ambiguous wording, complex substance, etc.
• Several types of items should be arranged in groups systematically. A clear set of directions should be provided for each new group of items.
• The most difficult questions should be placed near the end of the test so that the students have ample time to answer more questions.
• The space of margins should be ample for marking. Including more test items in a single page will create problems during administration and scoring of the test.
• The numbering of test questions should be consecutive irrespective of the varieties and groups.
• Any question item should not be split into two different pages. The introductory content for a question and the space for answering should be on the same page.
• The options of the multiple choice items should be vertically arranged below the stem of the question. Horizontal arrangement should be avoided.
• Each page of the exam paper has to be consecutively numbered along with the total number of pages. This can avoid problems later when the pages get separated.
• An Header has to be included indicating the name of the course, the current semester, the current academic year and page number
• All typographical and grammatical errors should be double checked.
• An answer key with distribution of marks for each question should be prepared before administering the test.

4.1.2.3 Quizzes
By definition, a quiz is a short and usually abrupt test to check the knowledge, understanding and the attentiveness of students during the class and usually done at the end of the lecture/lab/workshop or to check the students' revision and understanding of previous delivered material which is usually done at the beginning of the class. Thus it should be as short as possible (not more than 10mins) and students should keep in mind that there may be a quiz at the beginning or the end of any lecture so as to motivate them to be attentive and following the staff during the class and revise an already given material. On the contrary, if the quiz is made like an official exam announced to students in a particular date, it will disturb them totally and they will lose concentration following other
classes beside the pressure created on students during the whole semester. As a summary:

- The quiz period should not exceed 10 minutes.
- Number of quizzes per semester should not be less than three
- Quizzes need not to be announced to students because it is designed to check the students’ follow up of the lecture during class and the past delivered material.

4.1.2.4 Homework[^4]

- A homework is meant to be worked outside class hours using one’s own intellectual ability without discussing or collaborating with others. The end product should clearly show an original work utilising a unique style of representing facts presenting references to support its reliability.
- To get an original work from a student, the tutor has to ensure that the questions should be carefully thought. It has to be good enough to discourage cheating. Also it should be kept in mind that learning would not be more difficult than copying. Homework at these levels needs some improvisation and innovations from the teachers. The students should be forced to do some research.

Undesirable: Discuss the various losses in a pipe network?

Desirable: If you are an engineer working in the water supply station, what are the things that you would look into while designing the pipe network to supply water?

- A Homework should be challenging but not overwhelming. The homework question should be specific. Students might flounder in too general topics and the tutor will have to award marks for something might not be expected as an answer.

Undesirable: Explain briefly some leak detection techniques. Write short notes on flow sensors.

Desirable: There is a pipeline, carrying oil between Saudi Arabia and Syria. It is passing through Jordan. Some rebels in Jordan broke the pipeline and tried to steal oil. Explain what the oil company can do, applying the principle of fluid mechanics to detect and prevent the flow after breaking.

- Attaching printed internet pages along with the homework should be discouraged.
- Recycling a past homework should not be done.
- If possible, many variations of a homework can be distributed, maintaining a uniform difficulty level. Variations can include
  - Changes in the units of the physical quantity.
  - Changes in the physical quantity that has to be determined.
  - Changes in a module of computer program.
  - Changes in some components of a circuit.

Undesirable: Find the differences between Pumps and Compressors.

Desirable: Explain a situation in which you will use a pump instead of a compressor.

Desirable variation: Explain a situation in which you will use a compressor instead of a pump.

4.1.2.5 Exam Papers
i) The period of the mid-term exam paper should not exceed one hour and that of the final exam- two hours.
ii) A question paper should be set to test student’s thinking and not student’s memorization.
iii) Any paper should be consistent with three parts; easy part for any student who attends classes and follows up lectures can answer, moderate part for any student who prepare well can answer, the third is a challenging part for intelligent and hardworking students. Ideally, each of these parts shall be of equal composition i.e. of 33% but the following guidelines shall be followed for challenging part considering the level of the students viz. Certificate – 10%, Diploma – 20%, Higher Diploma – 33%.
iv) The question paper has to be shown to the HoD of the Dept/Center for approval before it is being copied.
v) HoD of the Dept./Center has to check the paper in regards with the following:
   a. Authenticity of the question paper- not repeated from previous exams.
   b. Consistency of the questions as describes in (iii).
   c. Length and time sufficiency of the question paper.
   d. Coverage of the course material and outcomes.
   e. Scheme of mark distribution- large scale to be used.
   f. Format of the paper.
   g. Spell checking.
vi) A soft copy of the final exam question paper has to be sent to the library, thus in no case a previous question paper is to be used or repeated for next exams. The checked answer sheets of final exams should be submitted to the HoD so as to be kept in a safe & secured place for at least one year, while the checked answer sheets of the mid-term exam can be distributed to the students.

4.1.2.6 Practical Examination
Practical examination has to be conducted for
(i) Practical Courses. (Workshop & Manual Drawing)
(ii) Mixed Courses. (Laboratories)
The duration of final practical examination is usually 1 to 3 hours.
i) The examinations are to be conducted in the week before the commencement of the Final Examination during the usual class schedule of the course.
ii) The course coordinator has to prepare a time-table after consultation with the other course tutors and displays a week before the commencement of the practical exams.
iii) The course coordinator also prepares the question paper after consultation with the other course tutors and gets the approval of the Head of the department.
iv) All the question papers should be unique for each section/batch and should not be reused.
v) Any additional resources like exam halls, invigilators for conducting the practical examinations would be allocated by the concerned Head of the department, if requested.
v) Double marking has to be done and the practical papers should be submitted to the Head of the department by the course tutor.

4.1.3 Final Year Project
4.1.3.1 Specifications of a project
- It is preferable to propose projects with new ideas.
- Projects should serve the process of college development.
- It is necessary that some projects are to be linked to industry needs.
- The report after finishing the project should be written in a standard form including:
  - Acknowledgement
  - Abstract (summary)
  - List of contents
  - Chapters of main work
- Results and discussion
- Conclusions
- Recommendations for future work
- References
- Two copies of the report are to be sent to the library.

4.1.3.2 Guidelines for Project Assessment
Nomination of a Reviewer for each project report is a must. The reviewer is supposed to receive the report at least one week before the project presentation. The reviewer duty is to check the language, structure and the content of the report if it is within his specialization. An examination board of at least three members with the Supervisor and Reviewer should be formed for the projects of each specialization.
The project Supervisor has the right of 60% of the total mark. Distribution of this mark is to be agreed within the department.
40% of the mark is to be given for the exam board which has to assess the report, the presentation and the oral test of each student. The scheme of mark distribution is to be agreed within the department (e.g. 10 for report and 30 for the presentation).

4.2 Rules and Regulations for Students.

1. Timing
- Students will be allowed into the exam hall 10 minutes prior to commencing the exam.
- After 30 min, no late students will be admitted into the exam hall.
- No student is allowed to leave the hall before 30 minutes after the start of the exam.
- Students are not permitted to leave the exam hall during the last 10 minutes.
2. Identity check-up

- Students will not be allowed inside the exam hall without an appropriate photo ID.
- Invigilators are responsible to ensure full compliance with such requirement.
- If a student forgets his/her College ID, the Omani ID card or driving license will be accepted in place.

3. Breaks

- Breaks for visits to bathroom may be taken only after permission from the invigilator and under the condition that the invigilator's instructions given on the particular occasion are followed. The invigilator stipulates which bathroom shall be used.
- If a student falls ill during the exam and is unable to complete the examination, he/she should alert the invigilator so that suitable arrangement may be made to ensure he/she receives proper medical attention.
- No student shall re-enter the exam hall after leaving it unless he/she was under approved supervision during the full period of absence.

4. Exam papers

- The invigilator distributes papers among students to be used for writing the answer. No other paper than that shall be used. An exam written on other paper will be considered invalid.
- Students are not allowed to read the exam paper until granted permission by the invigilator.
- During an ongoing exam students are not allowed to take the exam paper out of the hall. After the exam, the student should submit personally his/her exam paper to the invigilator.
- Even a blanked exam paper shall be handed-in to the invigilator.
- Each exam paper should contain details of the student's name, section and ID number.

5. Other materials

- Students should bring their own pencils, pens, erasers, rulers, calculators, and any other tools required for the exam.
- The invigilator will decide where the student's handbags, cases, outdoor clothes, GSM, etc shall be placed.

- Students are responsible for the safe keeping of all personal belongings they bring to the exam hall. The college takes no responsibility for the loss or damage of such belongings.

- Pencil cases, mobile phones (GSM), dictionaries, electronic dictionaries, written or electronic media, electronic devices, or any other materials are not permitted into the exam hall, with the exception of devices used for assisting students with hearing visual or other physical difficulties. Students may hand-in mobile phones to a member of staff prior to starting of exam.

- Calculators with more than one-line display or with alphanumeric display (programmable calculators) are not permitted into the exam hall unless specified in advance by the examiner. If the invigilator reasonably believes that a student is using a calculator that does not conform to the rules, he/she has the discretion to replace the calculator and a report on the matter will be made on the invigilator's declaration form.

6. Disturbance

- During the exam period, there must be no communications among students or between a student and an outsider via any mean, such as phones. This rule applies to students in the exam hall and those on supervised breaks for visits to bathroom/s.

- A student shall raise his/her hand if he/she wishes to communicate with the invigilator.

- No student shall leave his/her assigned seat without the permission of the invigilator.

- It is the invigilator's discretion to decide whether there is enough reason to remove a student from the exam hall owing to disorderly conduct. The invigilator shall always make note of the student's name, registration number and the course of event/s as well as notify the chief invigilator (or equivalent) of the occurrence/s

7. Cheating

- Cheating of any form is a serious academic offense. If proven, cheating will result in expulsion from the college. Cheating may include, but is not limited to, any deliberation attempt to gain an unfair advantage in any assessment including exams, homework, class projects, or any other assignments that contribute to a grade.
-If during an exam a student is found in possession of unauthorized material/s, he/she will face disciplinary actions. "In his/her possession" means on or next to his/her chair, in or on his/her clothing, on his/her body, or in his/her wallet or purse, in any written or electronic form. Failure to secure or submit unauthorized material/s prior to commencing the exam may result in a penalty or penalties for academic misconduct in accordance with the college's regulations.

8. Compliance

Failure to comply with the above rules will be considered as a breach of academic and examination rules and appropriate disciplinary actions will be taken.
Chapter 5
Policies & Procedures
**STUDENT ASSESSMENT POLICY**

<table>
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<th>Responsible Authority</th>
<th>Assistant Dean of Academic Affairs</th>
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</table>
| **Contact Details**    | 1. HoC of English Language Centre, Ext. No. 595  
                         2. HoD of Engineering Department, Ext. No. 510  
                         3. HoD of IT Department, Ext. No. 544  
                         4. HoD of Business Studies Department, Ext. No. 531 |
| **Authorization**      | NCT College Council  
                         Decision No. Date: |
| **Effective From**     | Date:                |
| **Amendments**         | This is the first written version of an existing policy. |
| **Superseded Documents** | n/a                 |
| **Review**             | Review to be done by AD Academics, Heads of ELC and Academic Departments; Policy review to be done annually, preferably during the Summer Term. |
| **File Number**        | **This will be assigned by DAFU.** |
| **Related Documents**  | 1. Examination Security Policy  
                         2. Academic Integrity Policy  
                         3. Student Grievance Policy  
                         4. Examination Procedures  
                         5. Procedures for ensuring validity, reliability and fairness in Examinations  

**Policy Statement**

Nizwa College of Technology is committed to design and deliver all the student assessment tasks according to the principles of validity, reliability and fairness to ensure the attainment of student learning outcomes in all the courses.

Assessment at Nizwa College of Technology is designed and conducted in compliance with the Part 7, "Examinations and Assessment" of Ministerial Decision No. 72/2004, Colleges of Technology Bylaws.
1 Purpose
1.1 The purpose of this policy is to
   a. provide a clear framework to conduct all assessment tasks uniformly across
      the departments of the college.
   b. ensure that the students' attainment of learning outcomes are measured by
      the guidelines of validity, reliability and fairness.
   c. outline the procedures to carry out various assessment methods
   d. encourage the teaching fraternity, to create and provide efficient and
      meaningful assessment opportunities thereby improving the learning of the
      students.
1.2 This policy reflects the values in the College's Mission Statement and is aligned
    with attainment of the goals and targets mentioned in the College's Strategic

2 Scope
2.1 This Policy applies to all students currently enrolled in the College and all the
    academic staff.

3 Definitions
3.1 Assessment: Any activity that measures the student's achievement of learning
    outcomes resulting in a mark or grade.
3.2 Assessment materials: Homework, Case-studies, Projects, Survey,
    Laboratory reports.
3.3 Validity: It is concerned about whether the assessment undertaken measures
    what it is supposed to be measured.
3.4 Reliability: It includes both the consistency of the assessment process to
    measure the skills of the students over a time and the consistency of the scorer
    to score the skills over a time.
3.5 Fairness: It ensures that all the students are assessed equally without any bias
    and do not discriminate against members of any ethnic/racial or gender group
    or against students with disabilities.
Forms of Assessment

4.1 Assessment may involve one or more of the following formats in Section 5.2 and will be clearly outlined in the course materials given to the students during the commencement of the semester.

4.2 A range of assessment methods will be used to assess the students which include, but not restricted to:
   a. Quiz
   b. Homework
   c. Class participation assessment
   d. Case studies
   e. Role playing
   f. Project works
   g. Written exams

Composition of Assessment

5.1 Theoretical courses should have assessment structure as follows:
   a. Course Work (30%) which includes
      Class exercises, Reports - minimum of three individual reports, Home work if possible - minimum three in number, Quizzes - minimum three in number,
      Student participation assessment, Practical test, Oral test, Presentations, Team work.
   b. Mid-term Examination. (20%)
   c. Final examination. (50%)

5.2 Practical courses should have the assessment structure as follows:
   a. Lab / Workshop reports - minimum eight in number. (30%)
   b. Interim tests - minimum two in number. (30%)
   c. Final Practical Examination. (40%)

5.3 Mixed courses should have the assessment structure as follows:
   a. Course Work (25%) which includes
      Lab/Workshop Reports – minimum of six individual reports (10%) Home work if possible - minimum two in number, Quizzes – minimum two in number,
      Student participation assessment, Oral test, Presentations, Team work (15%).
   b. Mid-term Examination (20%)
   c. Final Practical Examination (15%)
   d. Final examination (40%)
6 Authenticity of Assessment

6.1 As honesty and integrity is highly valued at NCT, any academic misconduct including plagiarism, cheating, fabrication and unauthorized collaboration by the students during an assessment will be dealt in accordance with the Academic Integrity Policy.

7 Submission of assessment materials

7.1 The course tutor specifies the date and time of submission for all assessment materials.

7.2 It is the responsibility of the student to submit the assessment materials within the due date.

7.3 The assessment materials submitted after the due date will be liable to a penalty. Any exceptional cases deemed appropriate should have prior approval in writing from the course tutor.

7.4 In case of electronic submissions like assignments uploaded by the students in the moodle, the date and time of the file saved on the server will be taken into account.

7.5 The standard penalty for late submissions for an assessment material will be 10% of the total marks for each day. Any submissions 10 days after the due date shall be awarded with zero marks.

8 Examinations

8.1 The Examination periods are the two-week periods which occurs in the middle and the end of the semester specified in the college’s academic calendar.

8.2 Midterm and Final Examinations must be conducted in accordance with the Examination Procedures of the college.

8.3 All other assessments are scheduled and monitored by the course tutor under the guidance of the Head of the Department, who will also provide any necessary administrative support if required.

8.4 All Examinations should be conducted for at least one hour wherever possible. No examination should be of more than three hours duration.

8.5 A draft timetable shall be produced by the timetable committee formed by the Head of the department and publicized two weeks prior to the examination. The students shall have one week for their feedback to the Faculty/Department.
After one week, a final time table incorporating any changes will be released and publicized.

8.6 The student is responsible for knowing the schedule of his exams and students will not be notified individually about the examination time table.

8.7 Any changes in the Final Examination after it has been published, due to exceptional circumstances must be notified to the concerned students and the Head of the department has to ensure this in coordination with the time table committee.

8.8 Students who do not attend the examination due to misunderstanding or misinformation from another person are not eligible for re-sit examination at another time or any other concession.

8.9 Preparation of the question paper in accordance with the Procedures for ensuring Validity, Reliability and Fairness in assessment will be ensured by the Course tutor(s), Course Coordinator, Head of the Section(s) and Head of the Department.

8.10 The Head of the department will inspect the question paper submitted by the course tutor / course coordinator in accordance with the Moderation Policy and approve the question papers.

8.11 The security of question papers has to be ensured by the Exam Security Policy, where the individual responsibilities of the persons involved are outlined.

8.12 Any misconduct by the student during the course of the examination will be dealt in accordance with the Academic Integrity Policy.

9 **Student Results**

9.1 The grades and marks for students in a course will be determined by the course tutor, in consultation with the course coordinator and is later approved by the Head of the department in accordance with the Moderation Policy.

9.2 The College council meets at the end of the semester to approve the results in accordance with the Procedures for Inspecting student results and the Moderation Policy.

9.3 Results are announced in the college website and will also be sent personally to the students through SMS.

9.4 A student can appeal in accordance with the Student Grievance Policy to the Head of the department within a week of the announcement of the results by
the college. The student is responsible for knowing the results as soon as it is announced and no appeal will be entertained after a weeks' time.

9.5 The Assistant Dean, Academic Affairs will ensure the rationale and quality of the student assessment results in accordance with the Procedures of the results analysis.

10 References


2 "Assessment and Student Progression Manual", Curtin University of Technology, Australia, Last accessed 10 January 2010.

11 Revisions

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<td>Assistant Deans, HoCs-ETC, ELC, HoDs – Academic Depts.</td>
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# Assessment Moderation Policy

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                        2. HoD of Engineering Department, Ext. No. 510  
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| **Authorization**     | NCT College Council                
                        Decision No. ______ Date:      |
| **Effective From**    | Date:                              |
| **Amendments**        | This is the first written version of an existing policy. |
| **Superseded Documents** | Academic Staff Manual.             |
| **Review**            | Review to be done by AD Academics, Heads of ELC and Academic Departments; Policy review to be done annually, preferably during the Summer Term. |
| **File Number**       | **This will be assigned by QAFU.** |
| **Related Documents** | 1. Student Assessment Policy     
                        2. Procedures for ensuring validity, reliability and fairness in Examinations  
                        3. Assessment Moderation Policy.  
                        4. Procedures for inspecting student results.  
                        5. Student Assessment Handbook, Nizwa College of Tech. |

## Policy Statement

Nizwa College of Technology will ensure the credibility of the student grades through a fair, valid and reliable moderation by analyzing, comparing and evaluating the assessment process and its results.
1 **Purpose**

1.1 The purpose of this policy is to ensure that:
   
a. the assessment covers the learning outcomes with approved items and clear criteria of measurement.

b. the student assessment is uniform, specifically when it is done by different staff to different student.

c. the student grades in a particular course are fairly distributed and any abnormal results are to be analyzed for quality assurance purposes.

2 **Scope**

2.1 This Policy applies to the Course work assessment, Mid-term and Final Examinations of the Foundation and Academic departments of the college.

3 **Definitions**

3.1 **Moderation**: A quality assurance process through which the comparability and quality of assessment is ensured.

3.2 **Assessment Item**: Objective and Descriptive questions in an assessment.

3.3 **Validity**: It is concerned about whether the assessment undertaken measures what it is supposed to be measured.

3.4 **Reliability**: It includes both the consistency of the assessment process to measure the skills of the students over a time and the consistency of the scorer to score the skills over a time.

3.5 **Fairness**: It ensures that all the students are assessed equally without any bias and do not discriminate against members of any ethnic/racial or gender group or against students with disabilities.

3.6 **Pre-assessment moderation**: It refers to the processes that ensure the clarity, content, distribution of items based on difficulty, timeframe and standard of an assessment method.

3.7 **Post-assessment moderation**: It refers to the processes that ensure the grades are in accordance with the set marking criteria and the college’s academic standards.

3.8 **Course Coordinator / Internal Moderator**: A member of teaching faculty who is also an expert in that subject or one of the course tutors appointed by the HoD.
3.9 **External Moderator:** A member from another institution or organisation who shall review the questions papers and marked answer scripts for moderation. This member will be recommended by the HoD during the start of a semester and shall continue to function throughout an academic year.

4 **IMPLEMENTATION**

4.1 **Pre-assessment Moderation**

4.1.1 Questions have to be set as per the prescribed norms (referring to the assessment methods & test specification agreed in the council meeting No.2 on 25/9/2006)

4.1.2 For courses with large number of sections and taught by many tutors, the course coordinator is to be in-charge for meeting all tutors to agree for a common exam paper. Each tutor should participate in setting the paper taking into consideration the standards, outcomes coverage etc.

4.1.3 Each course tutor/Coordinator has to submit a model answer key to the HoD with a clear marking scheme and in case of more number of sections, all the course tutors should follow the same answer key.

4.1.4 Every question paper should have a cover page with the course name, duration of the exam, total marks, detailed marking statements, name of the staff, etc. according to **PROCEDURES FOR ENSURING RELIABILITY, VALIDITY AND FAIRNESS IN EXAMINATIONS**.

4.1.5 The Question paper shall be reviewed by the Moderator for

a) A Standard Exam format.

b) Balanced distribution of questions, i.e. easy, moderate and challenging parts.

c) Clear Marking scheme.

d) Authenticity of exams, i.e. not repeated from previous exams.

e) Coverage of the exams to the objectives and outcomes of the course.

f) Time period of the exam to fit the length and number of questions.

g) Clarity and language proof.

All the other **PROCEDURES FOR ENSURING RELIABILITY, VALIDITY AND FAIRNESS IN EXAMINATIONS** should be followed.

4.1.6 In case of any disagreement between the moderator and the course tutor, the decision of the Head of the department is deemed final.

4.1.7 Course tutors should keep a record of the objectives and outcomes which are covered in all types of assessments.
4.1.8 The course tutor shall complete a **Moderation Form** which shall be duly countersigned by the Moderator and approved by the HoS and HoD along with the question paper.

4.2 **Post Assessment Moderation**

4.2.1 While the course tutor marks the scripts using a RED pen, the Moderator shall mark using a PINK pen. After Exam administration, the moderator is entitled to verify whether

- all assessment items and all scripts are marked
- all scripts are marked according to the marking scheme.
- Totaling and Sub-totaling in all scripts are correct
- all marks have been correctly transferred to the front page cover of script.
- all pages are considered including all rough work.
- any question is answered twice, it shall be ensured that the marks are taken into account for one attempt which is awarded with the maximum marks.

If the student has answered more questions than indicated by the examination rules, the marks from one or more questions must be disregarded in order to obtain the appropriate number of question marks. The lowest mark question or questions shall be disregarded.

4.2.2 The moderator should also carry out the following duties.

- Each page that has been considered by moderator must have some indication to this effect. If a page attracts no mark or comment internal moderator should put a line down in the outer margin to indicate that the page has been seen.
- The cases where there is a discrepancy between the marking and the variation in the total marks exceeds 10% of the total, the scripts shall be returned to the course tutor for correction.
- The total and sub-total of each section / part by verifying the number of questions allowed to answer when there are choices given. For example, if in part B, when a student is allowed to answer any 5 out of 6 questions, the best 5 answers shall be taken into account.
- No answer shall be left unmarked / unchecked even if it is written outside the assigned space.
4.2.3 The External Moderator will also review the scripts and submit an overall report to the HoD.

4.2.4 The Course tutor / Course coordinator submits the evaluated answer scripts to the Head of department.

4.2.5 The Head of Department will form a moderation committee for each branch / specialization / subjects to moderate the marks.

4.2.6 The committee shall choose at least 30% of the answer scripts either randomly for each section or from the scripts in maximum, average and minimum range of marks and check them in accordance with the **PROCEDURES FOR ENSURING RELIABILITY, VALIDITY AND FAIRNESS IN EXAMINATIONS**.

4.2.7 The Head of the department shall consult with the moderation committee regarding any abnormality in marks and shall take decisions regarding any appropriate change in marks.

4.2.8 The Head of the department also decides on borders of failure cases and borders of grades cases on merit.

4.2.9 The Head of the department shall submit the marks to the approval of the college council.
5 Schedule of Documents
5.1 Moderation Form
5.2 External Moderator Report
5.3 Department Moderation Committee – Minutes

6 References
"Principles of moderation of assessment (2008)", Australian Catholic University,

7 Revisions

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**QUESTION PAPER MODERATION FORM**

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<th>Semester:</th>
<th>Academic Year: 2009-2010</th>
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**Outcome Number**

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**Type of Questions**

- Objective questions
- Short answer questions
- Long answer questions

**Weightage of Questions**

<table>
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<th>Challenging questions</th>
<th>Moderate questions</th>
<th>Easy questions</th>
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**To be filled by the Moderator**

<table>
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<tr>
<th>Yes</th>
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**Reliability criteria**

- Authentic questions (Not repeated)
- Time Sufficiency
- A Comprehensive Answer Key
- Internal distribution of marks.

**Validity criteria**

- All questions match the outcomes of the course.
- All outcomes are given appropriate weightage.
- Standard norms of typesetting & format.

**Fairness criteria**

- Simple Language is used
- Instructions are clear
- Questions not favorable to one group of students.

**The question paper arrived sufficiently early to ensure ample time for checking it.**

**Modifications if any:**

I have checked the question paper thoroughly and verified all the items above.

Suggested modifications:

**Name and Signature of the Moderator**

Date Signed

(The details of major corrections are given overleaf)

**To be filled by the Course tutor**

Yes
No

- I have incorporated all the necessary changes suggested by the Moderator / HoS / HoD
- No changes suggested

**Name and Signature of the Course tutor**

Date Signed

---

Head of Section’s signature/date

Student Assessment Handbook

Head of Department’s signature/date

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EXAMINATION SECURITY POLICY

<table>
<thead>
<tr>
<th>Responsible Authority</th>
<th>Assistant Dean of Academic Affairs</th>
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| Contact Details       | 1. HoC of English Language Centre, Ext. No. 595  
                       | 2. HoD of Engineering Department, Ext. No. 510  
                       | 3. HoD of IT Department, Ext. No. 544  
                       | 4. HoD of Business Studies Department, Ext. No. 531 |
| Authorization         | NCT College Council  
                       | Decision No. Date: |
| Effective From        | Date: |
| Amendments            | This is the first written version of an existing policy. |
| Superseded Documents  | Academic Staff Manual. |
| Review                | Review to be done by AD Academics, Heads of ELC and Academic Departments; Policy review to be done annually, preferably during the Summer Term. |
| File Number           | **This will be assigned by QAFU.** |
| Related Documents     | 1. Academic Integrity Policy  
                       | 2. Examination Administration Procedures  

Policy Statement

Nizwa College of Technology will ensure high degree of credibility and responsibility among the members of the staff to uphold the integrity and safety of all the examinations.
1 Purpose
1.1 The integrity and credibility of examinations decides the quality of learning in an educational institution. As such, NCT strives to ensure that major examinations such as the midterm and final exams are credible and free from any doubt of tampering or leakage.
1.2 All members of the staff are strictly advised to follow strict rules in maintaining confidentiality and integrity of exam scripts and to ensure as well that strict guidelines are followed in the storage, distribution and retrieval of these exam scripts.
1.3 This document provides necessary information that staff should follow regarding this matter, as well as related general principles in exam scripts preparation, storage, distribution and retrieval.

2 Scope
2.1 This policy applies to all the members of the staff who are directly or indirectly involved in examination processes.

3 Definitions
3.1 Portable media: Any digital storage device like CD, DVD, Hard-disks, Flash drives Memory cards, etc.

4 IMPLEMENTATION
4.1 All the examination papers shall be developed by the course tutor for single section of the course or by the course coordinator for more than one sections of the same course.
4.2 The course coordinator/tutor shall follow strict security measures while drafting the exam script in the computer. The exam script shall be prepared in the computer of the course tutor/course coordinator only.
4.3 While the exam script is still being drafted, the course coordinator/tutor shall disconnect the computer from the college network so as to avoid any unauthorized access through hacking. The course tutor shall remove the network cable to disconnect.
4.4 A password shall be assigned to the file to avoid access by unauthorized persons of the exam script. No files shall be saved in a shared drive.
Examination paper shall neither be transferred through the college's messaging...
system to anyone nor be sent through mailing services.

4.5 While the exam script is still being drafted, the computer shall never be left unattended by the course tutor/course coordinator.

4.6 Printing of the exam script should be done personally by the concerned course coordinator/tutor, preferably in the department/center where he/she belongs.

4.7 The course coordinator/tutor should make sure that immediate action be made on changing the exam paper in case it is suspected that there is a leak of the exam or any related incident such as loss of portable media where the exam is saved.

4.8 Copies of the examination script shall be done by the course coordinator/tutor by visiting the college reprographic center personally.

4.9 High degree of care shall be taken to ensure that no examination script are left in the photocopying center.

4.10 Only the course coordinator/tutor and the HoD/HoS are allowed to handle the examination scripts prior to the examination.

4.11 During the examination period, the Chief Invigilator is also given authority in handling/securing the examination papers. In this regard, no other third party is allowed to handle the examination script before, during or immediately after the actual examination.

4.12 It is the responsibility of the course coordinator/tutor to submit the correct number of examination sheets to the General Exam Officer (AD of Academic Affairs) two (2) working days before the actual date of examination, duly sealed in a secure envelop with a clear marking of the contents. A cover page provided in the Examination Administration Procedures shall be used.

4.13 The General Exam Officer has the full responsibility in securing the storage of the exam papers in the Central Examination Office.

4.14 The Assistant Dean, Administrative affairs shall ensure the after-hours safety of the examination papers by appointing security personnel for the Central Examination Office.

4.15 On the day of actual examination/utilization of exam paper, and after the allotted time for the examination is over, the course tutor shall collect the answer scripts from the Central Examination Office, physically count the number of answer sheets handed over to him/her, and correspondingly sign in the acknowledgement book.

4.16 During the conduct of the exam/use of the exam paper, the invigilator’s shall ensure the safe custody and handling of the exam scripts, as well as the
assurance of no leakage of the paper before the start of the exam.

4.17 After the examinations, the answer scripts shall be collected in person by the course tutor from the central examination office in case of final examination and from the invigilator in case of Mid-term examination.

4.18 The member of the academic staff who is authorized to handle the examination scripts at a particular stage of the examination shall deemed to be responsible for any disclosure, leaking or tampering at that stage.

4.19 Any sanctions against such staff shall be carried out in accordance with the College’s Academic Integrity Policy.

4.20 The General Examination Officer shall postpone any examinations prior to its administration, if there is a doubt about the integrity of the examination or any evidence of leaking of question papers has been presented.

4.21 The General Examination Officer shall cancel any examinations after its administration, if there is a doubt about the integrity of the examination or any evidence of leaking of question papers has been presented.

4.22 Suitable arrangements shall be made by the GEO to arrange such examinations in a different date after consulting with the Head of Departments.

4.23 The Head of department shall ensure that all the students are intimated with the new dates of the re-examination.

5 Revisions

<table>
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<th>Version</th>
<th>Date</th>
<th>Author(s)</th>
<th>Approval</th>
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# EXAMINATION ADMINISTRATION PROCEDURES

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<tr>
<td>Superseded Documents</td>
<td>Examination Procedures section in Academic Staff Manual</td>
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<td>Review</td>
<td>Review to be done by AD Academics, Heads of ELC and Academic Departments; policy review to be done annually, preferably during the Summer Term.</td>
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| Related Documents     | 1. Examination Security Policy  
                        | 2. Academic Integrity Policy  

1. **POLICIES SUPPORTED**

   Assessment Policy  
   Academic Integrity Policy

2. **APPLICATION**

   This procedure applies to all the paper based and online exams conducted throughout the college and to be followed by all academic staff.

3. **EXCEPTIONS**

   International Exams like ICDL, TOEFL etc.

4. **DEFINITIONS**

   4.1 **General Examination Officer (GEO):** The Assistant Dean of Academic Affairs or a Teaching Staff of an Academic department deputed by the AD, Academic Affairs.  
   4.2 **Invigilators:** An academic teaching or non-teaching staff designated by the HoD  
   4.3 **Chief Invigilator:** An academic teaching staff designated by the HoD
4.4 **Course Coordinator**: An Academic staff teaching a particular course designated by the HoD to coordinate the activities of other staff teaching the same course for different sections.

5. **PROCEDURES**

5.1 Examinations of the academic departments, as well as the post foundation courses of the English Language Center-ELC, are conducted centrally under the supervision of the Assistant Dean of Academic Affairs (General Examination Officer-GEO).

5.2 A general meeting with the GEO and representatives from the Business, IT, Engineering Departments and ELC is usually held two weeks before the starting date of both Mid-Term and Final examinations to arrive a consensus on the following:
   a) Date, time and allocation of common and specialization courses,
   b) Announcement of exam time-table (draft copy),
   c) Receiving feedback from staff and students,
   d) Updating examination rules, regulations and procedures if necessary,
   e) Allocation of exam halls and invigilators, and
   f) Announcement of final time-table after considering feedback.

5.3 **Preparation of Time-Table**

5.3.1 The Head of the Registration Department prepares and distributes a clash list of courses registered by students.

5.3.2 All examination coordinators (representatives) agree first for the allocation and dates of common courses (post foundation courses, math courses, etc).

5.3.3 Department staff in-charge of exams shall prepare a draft time-table for their department courses ensuring that there are no clashes (based on the clash list), i.e. no student has two or more exams on the same day.

5.3.4 Draft time-table without invigilators' name shall be posted on all the department notice boards to receive feedbacks from students about the appropriateness of the course examination order and clashes in the dates and times of exams, if any.

5.3.5 Draft time-table shall also be circulated to teaching staff for their feedbacks.

5.3.6 If necessary, changes can be made in the time-table by analyzing the feedbacks received from both staff and students.
5.3.7 Then, the above time-table will be submitted to the exam coordinator (responsibility of one representative from each department in turn) for making a consolidated time-table with halls and names of the invigilators.

5.3.8 Students are distributed based on the capacity of the exam hall, taking into consideration that enough space (minimum of 1.5m distance) is provided between seats. The distribution starts first with large halls then the smaller ones.

5.3.9 More than two different sections of students are not allowed to be in the same hall, especially in the large ones.

5.3.10 The number of invigilators is decided based on the capacity of the exam hall. Two invigilators are allotted for rooms with (20-30) students and three/four invigilators for large rooms with (40-60) students.

5.3.11 A column of tutors against each exam course is added in the time-table to preclude that the tutor is not invigilator in the exam hall of his course.

5.3.12 The final time-table is sent to the A.D. Academic, one week before the start of the exams for checking and approval for announcement.

5.3.13 The final time-table is announced to students and circulated to staff.

5.4 Setting Question Papers

5.4.1 Questions have to be set as per the prescribed norms (referring to the assessment methods & test specification agreed in the council meeting No.2 on 25/9/2006) and submitted to the concerned Head of the Department at least three days before the date of examination.

5.4.2 For courses with large number of sections and taught by many tutors, the course coordinator (one of the tutors nominated by the HoD) is to be in-charge for meeting all tutors to agree for a common exam paper. Each tutor should participate in setting the paper taking into consideration the norms and the outcomes coverage of all.

5.4.3 To reduce opportunities of malpractice, the course tutor/coordinator has to prepare the question paper in two formats A and B especially for sections with large number of students (over 15). The differences between the two formats could include the sequence of the questions, the order of the multi-choice answers, etc.

5.4.4 Each course tutor/coordinator has to submit a model answer to the HoD with a clear marking scheme. This is necessary for cases of absence of the tutor and as a reference for checking results and student appeals.
5.4.5 Every question paper should have a cover page with the course name, duration of the exam, total marks, detailed marking statements, name of the staff, etc.

5.4.6 HoD shall authorize HoS or any other senior staff of their department to ensure the conformity and prescribed standard for the questions:
   a) Exam format to be standard as per the norms.
   b) Balanced composition of questions, i.e. to include easy, moderate and challenging parts. Ideally, each of these parts shall be of equal composition i.e. of 33% but the following guidelines shall be followed for challenging part considering the level of the students' viz. Certificate – 10%, Diploma – 20%, Higher Diploma – 33%.
   c) Marking scheme.
   d) Authenticity of exams, i.e. not repeated from previous exams.
   e) Coverage of the exams to the objectives and outcomes of the course.
   f) Time period of the exam to fit the length and number of questions.
   g) Clarity and language proof.

5.4.7 Course tutors should keep a record of the objectives and outcomes which are covered in all exams.

5.5 **Photocopying and Security of the Question Papers**

5.5.1 Head of the Department shall arrange with any staff/s of his choice for photocopying the question papers in a secure manner.

5.5.2 Staff in charge of photocopying should ensure that all the pages of the question paper have been copied without missing any page and also the required number of copies of the question paper is made.

5.5.3 Head of the Department shall keep the copies of the question paper along with the list of students in a sealed envelope. The front of the envelope should bear the details such as course name, number of students, hall no, date of examination, and names of the invigilators.

5.5.4 For the mid-term exam, it is the responsibility of the HoD of the concerned department/center to keep the sealed question papers in a highly secured place, and to distribute it to the invigilators during the day of the exam.

5.5.5 For the final examinations, the sealed question papers are sent two days before the exam of the particular course to the GEC to keep them in a highly secured place-Examination Office. It is his responsibility to distribute and collect the exam papers with the help of the chief invigilator of the day, who is nominated for better exam control.
5.6 **Conducting Theoretical Examinations**

5.6.1 Departments are responsible for announcing on boards the examination rules and regulation to students (Arabic & English copy) one week before the start of exams. Similarly, the invigilation duties have to be distributed to all staff.

5.6.2 Departments are responsible for assigning their own staff as Invigilators. Equal number of invigilation is ensured for each staff.

5.6.3 The required number of seats and proper seating arrangement is ensured through the Assistant Dean of Administrative & Financial Affairs/ Service Department with the coordination and supervision of the GEO.

5.6.4 Preparation of exam halls with regard to lighting, A/Cs etc. is also ensured through the Assistant Dean of Administrative & Financial Affairs/ Maintenance Department with coordination and supervision of the GEO.

5.6.5 During each day of exam, the service and maintenance staff are kept on emergency to handle any technical problem during examinations.

5.6.6 Mid-term examinations are usually conducted while classes are running, however to allow students to concentrate on their studies during the mid-term exams and to relieve them of exam tension, exams are conducted early (8-9 am) and the whole time-table of classes is shifted by one hour.

5.6.7 In case of Mid-Term Examinations, Invigilators have to collect the question packets at least 10 minutes before the start of the examination from the HoD office and go to the halls allotted to them.

5.6.8 In case of Final Examinations, Invigilators have to collect the question packets at least 20 minutes before the start of the examination from the Examination Office of the GEO and proceed to the halls allotted to them.

5.6.9 Invigilators are requested to read carefully the invigilation duties distributed to them and to implement it precisely to ensure smooth conduct of exams.

5.6.10 Invigilators should inform students about the exam rules and regulations especially the ones about malpractices before the start of the exam.

5.6.11 After the exam, countercheck the number of answer books against the attendance and keep them in the envelope and submit to the HoD in case of Mid Term Examinations and to the GEO for Final Examination.

5.6.12 Any case of malpractice has to be reported immediately to the GEO with any collected evidence/s and the signature of all invigilators.

5.6.13 Course tutors will collect the answer books immediately after the examination.
5.7 **Conducting Practical Examinations**
5.7.1 Practical exams are usually conducted during class time one week before the theoretical exams. However for courses with large number of sections, a time-table is prepared for the best use of the laboratories and workshops.
5.7.2 To avoid the shortage of labs/workshops and in case the same question paper (of a course with large number of sections) is used during the day, then no student is allowed to leave the laboratory/workshop till the time for the next section comes.

5.8 **Treating Malpractice Cases**
5.8.1 **Clear cases with solid evidence/s:**
5.8.1.1 The invigilator who discovers the malpractice has to collect the evidence of cheating like leaflets, ruler, calculator cover, GSM, programmable calculator, etc.
5.8.1.2 Writing on hands/clothes needs to be photographed if possible using digital camera or the invigilator mobile phone otherwise the content need to be commented in the report.
5.8.1.3 The student should not be stopped writing the exam except the cheating evidence has to be collected.
5.8.1.4 A report on the malpractice case/s has to be written with the signature of all invigilators in the exam hall.
5.8.1.5 At the end of the exam, the report, cheating evidence/s and the answer sheet of the malpractice case/s have to be submitted to the General Exam Officer, GEO (Assistant Dean of Academic Affairs).
5.8.1.6 The GEO has to pass the case/s on to the Assistant Dean of Student Affairs to investigate the case/s and take action based on article (85) of the bylaws.

5.8.2 **Cases of talking and looking at neighbor students:**
5.8.2.1 The invigilator has to warn the particular student/s two times. In each time, warning notice with signature has to be marked on the answer sheet.
5.8.2.2 The invigilator has the right to ask the student/s to shift his/her seating.
5.8.2.3 If the student tries again, then a third notice with signature on the answer sheet has to be fixed.
5.8.2.4 After fixing the third warning, the invigilator has to stop the student from writing and the case to be reported to the GEO.
5.8.3  **Evaluation and Review of Answer Books**

5.8.3.1 Course tutors should evaluate the answers as per the marking criteria.

5.8.3.2 Marking of answer sheets should not take more than three days.

5.8.3.3 It is the responsibility of the HoD/HoS to ensure that the evaluated answer books are given to a reviewer (another staff in the specialization of the course) for reviewing the total, any unmarked questions, and the consistency in marking. It has to be ensured that signatures of both the course tutor and the reviewer are on the answer scripts.

5.8.3.4 Student marks list signed by the course tutor and reviewer has to be submitted to the HoD for approval then to the registration department for producing the students' results.

5.8.3.5 HoD of each department/center is responsible to call for a meeting to discuss results moderation if necessary.

5.8.4  **Students Appeal**

5.8.4.1 Students are allowed to appeal according to article (68) of bylaws for rechecking of their answer papers through a designated form to the concerned HoD in three days time from the date of publication of examination results.

5.8.4.2 The checking of appeals is supervised by central committee chaired by the A.D. of student Affairs with membership of the A. D of Academic Affairs, HoD and two section heads from each department/center.

5.8.4.3 Checking of appeals in each department/center is done by the HoD, two section heads and one external member from another Dept/center. The internal checking committee of appeals should never include the course tutor of the appeal even if he/she is the Dean, Assistant Dean, HoD or the HoS.

5.8.4.4 The internal checking committee can invite any specialization staff member in the checking process who has good experience and taught the course of appeal.

5.8.4.5 To exclude emotional factors, the cover of the answer sheet containing the marks and the name of the student has to be removed before checking.

5.8.4.6 Any improvement in the students' grade shall be communicated to the Registration Department by the HoD after the approval of the Head of the central appeal committee. (A. D Student Affairs).
6. RESPONSIBILITIES

6.1 COURSE TUTOR

The course tutor should

1. Conduct the final practical examination in case of mixed courses, in the week before the final theory examinations.
2. Prepare the timetable, exam paper and the conduct the practical exam.
3. Submit the answer sheets of the practical examinations to the second marker.
4. Notify the students about the draft time-table of the theory exams when it is released for ensuring clashes.
5. Write the exam paper individually and ensure the conformity and prescribed standard for the questions which are set out in the Sec B, Examination procedures.
6. Ensure that the question paper is prepared well in advance so that the reviewer gets ample time to verify the prescribed standards of the paper.
7. Ensure two sets of question papers are provided when the no of students exceeds 15 (Fifteen).
8. Ensure approval of the Exam paper by the concerned HoS / HoD. During the approval, the model answer should be handed to the HoD.
9. Submit the course marks to the HoD before final theory examination.
10. Ensure the confidentiality of the exam questions and refrain from discussing any information pertaining to the contents of the question paper.
11. Include an attendance list of students enrolled in that course in the question paper envelope. Any student who is banned to sit for the exam (after official notification from the student affairs / Registration) should not be included in attendance list.
12. Include the details of exam, venue and invigilators on the face of the envelope.
13. Hand over the envelope to the HoD personally or to the invigilator on the day of the exam during Midterm exams and to the GEO in case of Final exams.
14. Be available in his/her office in case of any clarifications and discrepancies during the conduct of his/her exam.
15. Neither visit the examination halls of his/her own exams nor invigilate his/her own exams.
16. Collect the answer papers personally from the HoD in case of Mid term exams and GEO in case of Final exams.
7. Evaluate all the answer papers and have it reviewed by the second marker within three days of the exam.

8. Submit the marks of the final exam (theory + practical) to the HoD and then to the registration department for student results. The answer sheet envelopes (final + practical) should also be handed over to the HoD.

9. Maintain the confidentiality of the exam marks before it is officially approved by the college council.

6.2 COURSE COORDINATOR

The course coordinator should

1. Be responsible for the preparation of timetable, writing exam papers and conduct of the final practical examinations in coordination with other tutors.

2. Be responsible for writing the exam papers of the theory exams in consultation with the other tutors.

3. Carry out all the other duties of the course tutor set forth in section 6.1

6.3 INVIGILATOR

The invigilator has to

1. Collect the exam papers as well as one set of seat number cards from the exam office at least 20 minutes before the start of the exam and return them at the end.

Note: In case of Mid Exams, the Course tutors/coordinators have to hand over the exam papers directly to the invigilators in the exam rooms at least 15 minutes before the start of the exam. Then the invigilators should return the answer scripts to HoD of the concerned department.

2. Be present in the respective exam halls 15 min before the start of the exam and check whether the rooms is unlocked before entering and ensure that the number of desks fits the number of students.

Note: During midterm, classes run after the exam and the halls are kept open. The invigilator should ensure that the desks are well arranged and clean without any notes written for malpractice. The student should be informed that they bear responsibility of any written materials on the desk.

3. Give randomly a seat number to every student entering the exam hall from the set of cards. The student should sit in the appropriate number of the desk.
4. Ensure that all mobiles (GSM), pagers, dictionaries, programmable calculators and any related materials are taken away from the examination place. It is advisable to keep the GSM (switched off) down on the floor near the student's chair.
5. Ensure that students are sitting in their seat numbers before the start of the exam.
6. Make sure the students are seated in rows with maximum possible distance between the seats.
7. Inform the students about the examination rules especially cheating trails.
8. Distribute the exam papers with FACE DOWN then tell the students to write their full name, ID and any other required details.
9. Distribute alternatively, if a question paper is in two different forms A and B,
10. Ensure that no student answers using pencil. Answer must be given using pens only.
11. Circulate the attendance sheet to collect students' signature in front of their names. Check the college ID card of each student with his name written on the answer paper while taking the attendance. Note down the absence cases (with red color) and the total number of student attended the exam. Write their names and sign. Attach the attendance sheet to the answer sheet envelope.
12. Check when a student without the college ID card has any other identification like driving license/resident card, In case there no any identification and there is a suspect of someone writing the exam instead of that student, report immediately the case to the chief invigilator and write down a note on the answer script of that student.
13. Disallow latecomers, 30 min after the start of the exam. Similarly, disallow any student to leave the exam hall before 30 min from the start of the exam.
14. Inform the chief invigilator in case of any student who is late or confused about his/her section or exam hall. Calm down the student and allow him/her to sit in your room or a nearby room where his/her exam is there.
15. Decide in his/her discretion whether there is enough reason to shift a student from one place to another inside the exam hall or even remove him from the exam hall owing to cheating or disorderly conduct. Always make note of the student's name, registration number and the course of event/s as well as notify the chief invigilator (or equivalent) of the occurrence/s.
16. Be aware that he/she should not be an invigilator or a chief invigilator for his/her unit. On the day of his/her unit exam, he/she should not go round the exam halls.
case of students’ queries, he/she has to convey clarifications through the chief invigilator.
17. Be aware that he/she is not authorized to talk to students during the examination. He/she is not authorized to explain any doubts, ambiguities and questions raised by students. In case there is a query by many students, he/she can convey a message to the course tutor to do that.
18. Accompany the student and stipulate which washroom shall be used. Visits to washrooms may be taken only after permission from the invigilator and under the condition that the invigilator’s instructions given on the particular occasion are followed. The invigilator can ask the assistance of the chief invigilator.
19. Make suitable arrangement for proper medical attention, when a student falls ill during the exam and is unable to complete the examination. No student shall re-enter the exam hall after leaving it unless he/she was under approved supervision during the full period of absence.
20. Collect the seat cards before the end of the exam and arrange them in an ascending order.
21. Announce the time left for completion during the last half an hour of the exam, once in beginning and later before 5mins.
22. Go around collecting the answer books from the students while they are in their seats. Do not allow any student to stand up during the last few minutes of the exam.
23. Check carefully the exact number of answer sheets and put them in the specified envelope and submit the envelope/s to the chief invigilator/ exam officer in the exam office.

Note: In Mid-term Examinations, the envelope should be submitted to HoD of the concerned department or the course tutor can collect it personally in the examination hall.

6.4 CHIEF INVIGILATOR

The Chief invigilator should
1. Be present in the exam office at least one-hour before the start of the exam to assist the General Exam Officer (Assistant Dean of Academic Affairs) to distribute the sealed envelopes of exam papers on the day of the exam.
2. Go round the exam rooms to make sure that invigilation is being carried out properly and report any irregularities if any to the GEO.
3. Take immediate action to look for a substitute for absent invigilators with the help of the HoD of the corresponding department/center.

4. Make it clear to the invigilators that cheating must be dealt with very seriously. Ask the invigilator to collect any evidence and to write a report about the cheating case/s. Names of dishonest students should be noted down and attached to the envelope.

5. Ensure attendance sheets for all sections with signatures of the students in front of their names and also the names and signature of the invigilators. Remind the invigilator to keep these sheets in the answer sheet envelope.

6. Inform invigilators to write a note in red pen on the answer script for any student without ID, even if the student had brought a certificate.

7. Record the names & IDs of students who are not sitting their exam room and ensure that they are writing exactly the same course they supposed to write.

8. Have a record of absent students. Cross check the absent students with the students who are not sitting in their respective exam rooms.

9. Make a round before the end of exam and inform the invigilators to make sure that the number of answer books received is equal to the number of students who sat for the exam.

10. Assist the exam officer in receiving the answer scripts along with the students’ attendance from the invigilators after the exam.

11. Assist the exam officer to hand over the answer sheets to the unit tutors.

12. Report in the examination logbook notes about the exam progress and any problems or irregularities committed either by the invigilators or by the students.

13. The exam invigilator/s has to verify the items listed in the Appendix

7 SCHEDULE OF DOCUMENTS

7.1 Examinations Time table - Template

7.2 Schedule of Invigilation - Template

7.3 Examination Front Page – Template

7.4 Examination Packets Cover page - Template

7.5 Report of Malpractice – Form

7.6 Checklist for Chief Invigilators – Form
1. Examinations Time Table Template

<Name> Department – <Final/Mid> Examination Schedule Semester <No> / <200X – 20XX>

<table>
<thead>
<tr>
<th>Day</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Sections</th>
<th>No. of Studs.</th>
<th>Tutors</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>
7.2 Schedule of Invigilation - Template

**<FINAL/MID> EXAMINATION SCHEDULE SEMESTER <NO> / 200X – 20XX**

<table>
<thead>
<tr>
<th>Day/Time</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Sections</th>
<th>No. of Studs</th>
<th>Tutors</th>
<th>Room No</th>
<th>Invigilator</th>
<th>Chief</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

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7.3 Examination Front Page – Template

NIZWA COLLEGE OF TECHNOLOGY
<Name> DEPARTMENT – <Section>
Academic year 20XX-20XX, Semester <No>

FINAL EXAMINATION – <MMM>-<YYYY>
<COURSE CODE>: <COURSE NAME>

Date: DD-MM-YYYY
Total Marks: <No>
Time: <No> Hrs

<table>
<thead>
<tr>
<th>Name</th>
<th>ID</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PART A (10 Marks Each)</th>
<th>Q.No</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marks</td>
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<td>Q.No 11</td>
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<td>Marks</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>PART B (15 Marks Each)</th>
<th>Q.No</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marks</td>
<td></td>
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<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>PART C (3 Marks Each)</th>
<th>Q.No</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

GRAND TOTAL

General Instructions:

Examiner 1 (Name and Signature) Examiner 2 (Name and Signature)

(<Name of Course Tutor>) (<Name of Course Coordinator>)
Report of Malpractice by a Student
Under NCT's Academic Integrity Policy V 1.0, Dr.04/07/2009

Date:

Name of the Student:

ID:

Department / Section:

Course Name & Code:

Type of Assessment (Please circle): Quiz / Homework / Mid-Exam / Final Exam

Others. Please Specify:

Name(s) of the Invigilator(s) (In case of Exams):

The above student has violated academic integrity under Item

Plagiarism ☐ Cheating ☐ Deception ☐ Facilitation ☐ Sabotage ☐

Comments of the Course Tutor:

Evidences: (Please attach documentary evidence based on which the decision has been made)

(1) 

(2) 

(3) 

Report filed by: (Please sign)

Name: ____________________________

Course Coordinator / Course Tutor / Invigilator

Name: ____________________________

Chief Invigilator

Head of Department

AD / Academic Affairs

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### 7.5 CHECKLIST FOR CHIEF INVIGILATORS - Form

The Chief Invigilator/s has to verify the following:

<table>
<thead>
<tr>
<th>#</th>
<th>Item</th>
<th>Task</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Invigilation duty</td>
<td>Attendance of invigilators</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Availability of exam papers</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Checking that no information and explanation is given by invigilators</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Students' attendance sheet signed by invigilators</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Students sitting not in their proposed rooms</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>are writing their exact exam</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Late students reported</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Implementation of exam rules</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Seating of students</td>
<td>Even Distribution of students</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enough spacing among seats</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Checking cleanliness of desks</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Exam Environment</td>
<td>Working condition of ACs</td>
<td>Quietness and cleanliness of the exam hall.</td>
</tr>
<tr>
<td>4</td>
<td>Material related to</td>
<td>Course material outside the hall</td>
<td></td>
</tr>
<tr>
<td></td>
<td>exam</td>
<td>No dictionaries and pagers</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>No programmable calculators</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>GSMs down the seat on floor</td>
<td></td>
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<td></td>
<td></td>
<td>Checking cleanliness of students' stationeries</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>malpractice</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Following exam rules</td>
<td>Answer using pen</td>
<td></td>
</tr>
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<td></td>
<td>by students</td>
<td>Proper distribution of question forms: A &amp; B</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Malpractice report/s</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Student Identification</td>
<td>Students without ID cards</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Checking faces of students with the photos of the ID cards</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Checking the name on the answer sheet with the name on the ID card.</td>
<td></td>
</tr>
</tbody>
</table>
PROCEDURES FOR ENSURING RELIABILITY, VALIDITY AND FAIRNESS IN EXAMINATIONS

<table>
<thead>
<tr>
<th>Responsible Authority</th>
<th>Assistant Dean of Academic Affairs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective From</td>
<td>Date:</td>
</tr>
<tr>
<td>Amendments</td>
<td>This is the first written version of an existing procedure</td>
</tr>
<tr>
<td>Superseded Documents</td>
<td>Examination Procedures section in Academic Staff Manual</td>
</tr>
<tr>
<td>Review</td>
<td>Review to be done by AD Academics, Heads of ELC and Academic Departments; policy review to be done annually, preferably during the Summer Term.</td>
</tr>
<tr>
<td>File Number</td>
<td><strong>This will be assigned by QAFU.</strong></td>
</tr>
<tr>
<td>Related Documents</td>
<td>1. Examination Security Policy</td>
</tr>
<tr>
<td></td>
<td>2. Academic Integrity Policy</td>
</tr>
<tr>
<td></td>
<td>3. Student Grievance Policy</td>
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<td></td>
<td>4. Examination Administration Procedures</td>
</tr>
<tr>
<td></td>
<td>5. Procedures for ensuring consistency of examinations.</td>
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<td>6. Procedures for inspecting student results.</td>
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<td>7. Procedures for results analysis.</td>
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<tr>
<td></td>
<td>8. Student Assessment Handbook, Nizwa College of Tech.</td>
</tr>
</tbody>
</table>

1. POLICIES SUPPORTED

Assessment Policy
Academic Integrity Policy

2. APPLICATION

This procedure applies to all the paper based and online exams conducted throughout the college and to be followed by all academic staff.

3. EXCEPTIONS

International Exams like ICDL, TOEFL etc.

4. DEFINITIONS

4.1 Course Coordinator: An Academic staff teaching a particular course designated by the HoD to coordinate the activities of other staff teaching the same course for different sections.
4.2 **Assessment Quality Subgroup:** Members of the teaching staff who are designated by the respective Head of the departments to oversee and improve the quality of assessment in the college.

4.3 **Reliability:** It includes both the consistency of the assessment process to measure the skills of the students over a time and the consistency of the scorer to score the skills over a time.

4.4 **Validity:** It is concerned about whether the assessment undertaken measures what it is suppose to measure.

4.5 **Fairness:** It is concerned about whether an assessment process provides equal opportunities to all students irrespective of their gender and background, to demonstrate their skills.

5. **BACKGROUND**

The quality of an assessment depends on how well it is designed, implemented, administered, scored and analysed. All the staff who are involved in all the above processes are responsible for ensuring that an assessment is of high quality. Reliability, validity and fairness are the three main indicators of quality of an assessment. Further information pertaining to these indicators was available in the **Student Assessment Manual**. The procedures for ensuring all these are provided in the next section.

6. **PROCEDURES**

6.1 **PROCEDURE FOR ENSURING RELIABILITY**

6.1.1 The College’s Assessment quality subgroup will develop plans to estimate reliability in Mid-term and Final Examinations using internationally proven and adopted procedures and methods.

6.1.2 The College’s Assessment quality subgroup specifies the intended procedures to the Head of the departments, who in turn will provide all the necessary data for calculating reliability. These procedures can be

(i) **Test – Retest Reliability**

(ii) **Split-half Reliability**

(iii) **Spearman-Brown Formula**

(iv) **Kuder – Richardson 20 (Inter-item reliability)**
(v) Cronbach’s Alpha (Inter-item reliability)
(vi) Inter-rater reliability

6.1.3 Most of the methods for estimating reliability can be applied only to forced choice questions which constitutes utmost 40% of the examination marks in the college.

6.1.4 Standardized Exam Administration Procedures will be adopted while conducting Mid term and Final examinations. They include uniform environment, uniform time frame and uniform invigilation to all the students. They will be disseminated to everyone who administers the assessment to ensure uniformity.

6.1.5 The scoring procedures should be uniform for all the students. This can improve reliability when two different tutors score the same paper. (Inter-rater reliability).

6.1.6 The scoring of marks should be based on the answer key prepared in advance to the administration of exam. The answer key should clearly show the internal distribution of marks for long answer questions. It should also show the criteria or the information expected in a descriptive answer and its individual weightage.

6.1.7 Provision of ample time improves the reliability of an examination. So the examiner should keep the time factor in mind while preparing the assessment item.

6.1.8 The student should not be unfairly penalized for errors in grammar, spelling, neatness, vocabulary etc when they do not form the criteria for assessment.

6.1.9 Any alternative methods, that are deemed appropriate, to obtain the answer may be mentioned in the answer key, if possible. Due consideration should be given to the answers arrived alternatively to a question.

6.1.10 If a student answers extra questions when there is a choice in the questions, all the extra questions attempted should be scored and the questions with maximum score can be included for the final marks.

6.1.11 While scoring descriptive questions, it is always better to take one question at a time of all the students to improve reliability in scoring i.e. scoring answers to question no.1 of each student at the same time.

6.1.12 Also while scoring descriptive questions, the chances are very high for the scorer to be prejudiced and unreliable if the identity of the student is known. The scorer can be biased to award high marks influenced by the high-scoring history of the student. So it is better to hide the names of the student before scoring.

6.1.13 The order in which the answer papers are scored also have impact in the grading of the student. A teacher can grow more critical or become more lenient after reading
through many papers thus the early papers may receive lower or higher scores than the papers of same quality scored later.

6.1.14 The marks achieved by the student in the previous questions or sections could also influence the scorer while scoring the current item. So it is suggested to keep those scores out of sight.

6.1.15 Two scorers are used to increase the reliability and authenticity in assessment.

6.1.16 Insights gained while scoring could serve as valuable indicators for a tutor to self check and rethink the design of a test item in future with respect to its clarity and difficulty. This could considerably improve the reliability of the exam.

6.1.17 The number of students answering a specific question correctly or incorrectly can justify the examiner’s assumption regarding the difficulty of the question.

6.1.18 Question items that are answered by majority of the students are very easy. This can justify a teacher’s assumption regarding the difficulty of a question. The possibility that such questions containing clues to the answer should be verified.

6.1.19 Question items that are answered by fewer students are very difficult. There can be a difficult question answered by more poor students than better students. This affects reliability. Other possibilities include incorrect answer for this question in the answer key and poor wording of the question which should be corrected.

6.1.20 Besides, if a difficult question is answered by a low scoring student, there is a possibility that the question can be answered by a guess, in which case it has to be rephrased and moved to a different category. For example, if the difficult question is a True/False question, it has to be shifted to another category. This can improve reliability by reducing guesswork.

6.1.21 A question answered by none or very few number of students may indicate it is too difficult. This may require further instruction from the teacher.

6.1.22 The overall performance of a student in the examination can be compared with their performance in the individual question or item (Item-test Correlation). The questions for which most of the high scoring students answered correctly are consistent with the exam as a whole. Also a question for which most of the low scoring students answered incorrectly are also consistent with the exam as a whole. The other questions which have low correlations can be removed or rephramed.

6.1.23 In multiple choice questions, the options not selected by the students may be not good enough to distract them. In this way, the design of distractors could be refined.
6.1.24 The lesser the chance for obtaining answers by guesswork, the greater the reliability. So questions should be designed to discourage obtaining answers by chance.

6.1.25 Stricter measures and tighter controls during invigilation should be ensured to discourage cheating in any forms. Cheating affects the stability of the assessment. Better test items can always improve reliability and can be constructed following the guidelines mentioned in Section 2.2.2.2 of the Student Assessment Handbook.

6.1.26 Reliability in scoring the papers is also another important factor that affects the quality of the assessment.

6.1.27 Mis-scoring an assessment item reduces the reliability.

6.1.28 Two course tutors scoring a paper for two sets of students should use a common answer key. The scoring should be uniform and strictly according to the answer key.

6.1.29 This would also apply when two course tutors score a paper of the same student.

6.2 PROCEDURE FOR ENSURING VALIDITY

6.2.1 The College’s Assessment quality subgroup will develop plans to ensure validity in Mid-term and Final Examinations with the administrative support of the Head of the departments.

6.2.2 All assessment items should be matched with the goals and objectives of the course. The exam should comprise items that cover the objectives of that specific course. For e.g. it does not assess writing skills, when it is supposed to measure problem solving (Content Validity). This could be ensured with the current Moderation Form. Statistical methods cannot be used to check this type of validity. A wide range of assessment items with more number of relevant questions will ensure this validity.

6.2.3 The assessment appears like it does measure the construct of interest. For e.g. It appears more valid when a TV program's popularity is measured with the number of viewers than with the number of TV sets switched ON (face validity). This could be ensured by reviewing the paper with another subject expert. Statistical methods cannot be used to check this validity.

6.2.4 Compare the results of assessment of a particular course with the results of another related course taken by the same student. For e.g. the results of workshop technology course and the results of manufacturing process of the same student would closely match. (Convergent validity).
6.2.5 Compare the results of the students in one section with the results of the students in the other sections. If there is a close relationship, then assessment has external validity (Transfer and Generalizability).

6.2.6 Assessment items that require students to respond from memory should be strictly avoided.

6.3 PROCEDURE FOR ENSURING FAIRNESS

6.3.1 The Assessment criteria for each course has to be clearly disseminated to the students through oral and written means before the examination.

6.3.2 Directions and instructions should be clear and should be given in simple language.

6.3.3 Both judgemental and statistical review would be employed to improve fairness in assessment.

6.3.4 The Assessment items will be judged for fairness by the Moderator, Head of section and Head of Department. Any items that are deemed to be biased to one group of students would be either reviewed or deleted. (Pre-assessment)

6.3.5 The Assessment quality subgroup would carry out a statistical review of the exam questions. The questions that are most answered by the students would be taken as a first group and the others as second group. The groups could then be analysed for any bias. (Post-assessment)

6.3.6 While scoring descriptive questions, the chances are very high for the scorer to be prejudiced if the identity of the student is known. The scorer can be biased to award high marks influenced by the high-scoring history of the student. So it is better to hide the names of the student before scoring. This could improve fairness.

6.3.7 The order in which the answer papers are scored also have impact in the grading of the student. A teacher can grow more critical or become more lenient after reading through many papers thus the early papers may receive lower or higher scores than the papers of same quality scored later. This could improve fairness.

6.3.8 The marks achieved by the student in the previous questions or sections could also influence the scorer while scoring the current item. So it is suggested to keep those scores out of mind and sight.

6.3.9 A piece of work submitted by a student satisfying the assessment criteria should have the same marks as a similar work. This can reduce complaints from students.
claiming that they have received less mark than the other student who has written the same answers.

6.3.10 A past performance of a student can influence current scoring, knowledge of student gender could also influence scoring as there is a general belief that girls are more sincere, hardworking and usually write exams well. So it is suggested to hide the names before scoring.

7. REFERENCES


North Central Regional Educational Laboratory, "Reliability, validity and fairness of classroom assessment", <http://www.ncrel.org/sdrs/areas/issues/methods/assessment/as5relia.htm>


5.6 Inspection of Consistency of Examinations.

The quality of the summative assessment methods is checked by the HoD/HoC as shown in fig. (6). Each course coordinator/tutor submits the question paper with a model answer to the HoD for checking and approval. The HoD verifies the format, clarity, outcomes coverage, length, mark distribution, genuineness and balance of exam papers. The course tutor also keeps an assessment record in the course file. Checking of answer sheets is usually done by the course tutor and a reviewer based on the model answer. Copying and plagiarism cases are usually treated by the invigilator/course tutor who has full discretions to check the authenticity of students’ answers through oral test and investigation. Any case of this kind is treated strictly as per the college bylaws. Cases of cheating during exams are usually dealt by the investigation committee and if proved, the disciplinary committee will take action according to article (80) of bylaws. To check the standards of the exam papers, the HoDs send sample copies of the papers to relevant institutions. An evaluation questionnaire designed for this purpose is also sent with the papers as a sort for the feedback.

5.7 Inspection of student results.

The procedure for checking results is illustrated in fig. (2). The aim of this procedure is to verify that tutors are following the right procedure of assessment of students described in the chapter 3 and the above articles.

To check that rational and realistic assessment was deployed based on the summative assessment methods & test specifications.

At the end of the semester the results of the students are discussed in a college council, the histogram of results of each course is checked; extreme cases with abnormal distribution are investigated and minted.

The outcomes of the council meeting are then discussed in each dept/center so as to improve the assessment methods of those abnormal cases.

Students’ appeals sometimes provide a mean to verify the sincerity of the staff. The appeal committee in each dept/center has to comprise members other than the course tutor.
5.8 **Analysis of student results.**

According to the college exam policy agreed in the council meeting No. (7) on 7th May 2007, the Assistant Dean of Academic Affairs has to identify the abnormal cases of results and to coordinate with HoDs to ask tutors having these abnormal results to justify it as illustrated in fig. (3). Justification of results needs to include answers of the following:

1. Distribution of the results- histogram.
2. Authenticity of mid & final exams, i.e. not repeated from previous exams.
3. Consistency of the mid & final exams, i.e., including easy, moderate and challenging parts.
4. Coverage of the exams to the objectives and outcomes of the course.
5. Time of the exam.
6. Consistency of the assessment methods applied by the tutor: quality & quantity of HWs, quizzes, class participation, attendance and other assignments.
7. The conduct of other sections having the same course and taught by other staff members.

Fig. 3 Procedure for analysis of results & results consistency
6 References


