



**NATIONAL BOARD FOR TECHNICAL EDUCATION**

**NATIONAL DIPLOMA (ND)**

**IN**

**MULTIMEDIA TECHNOLOGY**

**CURRICULUM AND COURSE SPECIFICATIONS**

**SEPTEMBER, 2020**

## **FOREWORD**

In the last quarter of 2009, the National Board for Technical Education (NBTE) approved the introduction of the National Diploma in Multimedia Technology in the polytechnic system in Nigeria. This was done in response to the dearth of multimedia technicians in Nigerian digital media outfits generally.

After about ten years of the implementation of the programmes in the polytechnics, a review of the existing ND curriculum is required in order to update it and keep it abreast with recent developments in the field. Participants in the review workshops were drawn from the polytechnics, universities and employers of diplomates of the programme.

The curriculum is structured in unit courses in line with the provisions of the National Policy on Education which makes it mandatory for all institutions of higher learning to operate the credit unit system in order to facilitate the transfer of credits obtained in one institution to a similar programme in another institution.

I wish to express the Board's sincere appreciation to the curriculum review workshop participants as well as all the others (too numerous to list here) who offered their unstinted assistance to make this updated curriculum one that would meet the needs of this nation.

**Dr. M. A. Kazaure, mni**  
**Executive Secretary.**

# GENERAL INFORMATION

## 1.0 NATIONAL DIPLOMA (ND) National Diploma in Multi Media Technology

### 1.1 Programme Goal

The programme is designed to produce Multimedia Technicians capable of undertaking the design and implementation of multimedia applications and web sites utilizing a broad range of up to date multimedia assets and equipment for a wide range of employers including:

- Business Centres
- Media Houses
- Publishing Houses
- Training Centres (both commercial and academic)

### 1.2 Programme Objectives

On completion of the programme the diplomates of ND in Multimedia Technology will be able to:

1. Operate multimedia equipment including:
  - personal computer systems;
  - digital audio and video production studios;
  - multimedia presentation systems;
2. Maintain multimedia equipment;
3. Create basic elements of digital media including audio, video, animation and images;
4. Implement effective multimedia presentations and applications that incorporate appropriate forms of digital media;
5. Design, implement and maintain websites utilizing best practice techniques;
6. Plan multimedia projects and manage it.

### **1.3 Minimum Entry Requirements**

Applicants with any of the following may be considered for admission into the National Diploma Programme in Multimedia Technology:

Five credit/merit “O” level passes at not more than two sittings in WASSCE/GCE//NTC/NBC subjects including credit passes in English, Mathematics, any basic science (Physics, Chemistry, Biology) and any two others from: Computer Studies, Information and Communication Technology, Data Processing, Graphic Design, Photography, Technical Drawing, Visual Art, Music, Picture Making, Business Management, Printing Craft Practice, Radio, Television and Electronics Work Practice, Chemistry, Economics/Commerce, Applied Electricity, GSM Phones Maintenance and Repairs, Basic Electronics, Civic Education.

1. Any other academic qualification acceptable to NBTE.

### **1.4 Programme Duration**

The National Diploma programme in Multimedia Technology is structured to run for two academic sessions of two semesters each.

### **1.5 Project**

Project work is an integral part of the National Diploma curriculum. The student will carry out an original project in the field of Multimedia Technology to qualify for the ND certificate.

### **1.6 Evaluation**

For the purpose of awarding the National Diploma in Multimedia Technology, evaluation of students’ shall comprise course work, examinations, (tests, quizzes, practicals, etc.) Project and SIWES. The weighting of each of the components shall be as prescribed by the National Board for Technical Education/the institution running the programme.

### **1.7 Certificate**

The National Diploma (ND) shall be awarded only to persons who have satisfied all conditions for the award of the certificate as laid down by the National Board for Technical Education (NBTE) and the institution in which the programme is offered.

## **2.0 CURRICULUM COMPONENTS**

**2.1 The Curriculum of the ND Multimedia Technology programme consists of four main components. These are:**

- i) General Studies Courses
- ii) Foundation course
- iii) Professional Courses
- iv) Students Industrial Work Experience Scheme (SIWES)

**2.2 The General Studies component shall include courses in:**

- a) English Language and Communication, (compulsory);
- b) Citizenship Education I and II (compulsory);
- c) Entrepreneurship Development (compulsory);
- d) Foundation courses.

**2.3** The General Studies component shall account for 10-15% of the total contact hours for the programme.

**2.4** Foundation Courses include courses in English, Languages, Basic and Computer Applications. The number of hours will account for about 10-15% of the total contact hours.

**2.5** Professional Courses are those courses which give the student the theory and practical skills he needs to practice his field of calling at the technician level. These may account for at least 60% of the contact hours of the programme.

**2.6** Students Industrial Work Experience Scheme (SIWES) shall be taken during the long vacation following the end of the second semester of the first year. (See details of SIWES in section 7.0).

## **3.0 CURRICULUM STRUCTURE**

The structure of the programme consists of four semesters of classroom and laboratory/workshop activities in the institution including (3-4 months) of Students Industrial Work Experience Scheme (SIWES). Each semester shall be of 17 weeks duration made up as follows: 15 contact weeks of teaching and practical exercises, and two weeks for registration and examinations.

SIWES shall take place at the end of the second semester of the first year.

#### **4.0 ACCREDITATION**

The programme shall be accredited by NBTE before the diplomate can be awarded the certificate. Details of the process of accrediting a programme for the award of the ND are obtainable from the Executive Secretary, National Board for Technical Education, P.M.B. 2239, Kaduna, Nigeria.

#### **5.0 CONDITIONS FOR THE AWARD OF THE NATIONAL DIPLOMA**

Institutions offering the programme will award the National Diploma to a candidate who successfully completes the programme after passing prescribed course work, examinations, project and the Students Industrial Work Experience Scheme. Such a candidate should have completed a minimum of 72 and 80 maximum semester credit units.

The Diploma shall be classified as follows:

Distinction	-	GPA of 3.50 - 4.00
Upper Credit	-	GPA of 3.00 - 3.49
Lower Credit	-	GPA of 2.50 - 2.99
Pass	-	GPA of 2.00 - 2.49
Fail	-	GPA of below - 2.00

#### **6.0 GUIDE NOTES FOR TEACHERS**

**6.1** The curriculum is drawn in unit courses. This is in keeping with the provisions of the National Policy on Education which stresses the need to introduce the semester credit units which will enable a student who so wishes to transfer the units already completed in an institution to another institution of similar standard.

- 6.2** As the success of the credit unit system depends on the articulation of programmes between the institutions and industry, the curriculum content has been written in behavioral objectives so that it is clear to all the expected performance of the student who successfully completes the programme. There is a slight departure in the presentation of the performance based curriculum which requires the conditions under which the performance is expected to be carried out and the criteria for the acceptable levels of performance. It is a deliberate attempt to further involve the staff of the department teaching the programme to write their own curriculum stating the conditions existing in their institutions under which the performance can take place and to follow that with the criteria for determining an acceptable level of performance. The Academic Board of the institution may vet departmental submission on the final curriculum. The aim is to continue to see to it that a solid internal evaluation system exists in each institution for ensuring minimum standard and quality of education in the programmes offered throughout the polytechnic system.
- 6.3** The teaching of the theory and practical work should, as much as possible, be integrated. Practical exercises, especially those in professional courses and laboratory work should not be taught in isolation from the theory. For each course, there should be a balance of theory to practice in the ratio of 60:40 or the reverse.
- 6.4** The head of department of this programme should possess his degrees in any of the following areas in the order of preference: Multimedia, Computer Science and Industrial Design, while a lecturer can as well have his degree in the listed programmes and also in Music.
- 6.5** The Technical Support staff to Mann the Studios and Laboratory facilities should possess minimum of HND the following in the order of preference: Multimedia, Computer Science, Graphic Design, Industrial Design and Mass communication.

## **7.0 GUIDELINES ON SIWES**

For the smooth operation of the SIWES the following guidelines shall apply:

### **7.1 Responsibility for Placement of Students**

- (a) Institutions offering the ND programme shall arrange to place the students in industry. By April 30 of each year, six copies of the master list showing where each student has been placed shall be submitted to the Executive Secretary, NBTE who shall, in turn, authenticate the list and forward it to the Industrial Training Fund, Jos.
- (b) The Placement Officer should discuss and agree with industry on the following:

- i) A task inventory of what the students should be expected to experience during the period of attachment. It may be better to adopt the one already approved for each field.
- ii) The industry-based supervisor of the students during the period and the institution-based supervisor,
- iii) The evaluation of the student during the period. It should be noted that the final grading of the student during the period of attachment should be weighted more on the evaluation by his industry-based supervisor.

## **7.2 Evaluation of Students During the SIWES**

In the evaluation of the student, cognizance should be taken of the following items:

- (a) Punctuality
- (b) Attendance
- (c) General attitude to work
- (d) Respect for authority
- (e) Interest in the field/technical area
- (f) Technical competence as a potential technician in the field.

## **7.3 Grading of SIWES**

To ensure uniformity of grading scales, the institution should ensure that the uniform grading of students work, which has been agreed to by all polytechnics, is adopted.

## **7.4 The Institution-Based Supervisor**

The institution-based supervisor should initial the log book during each visit. This will enable him to check and determine to what extent the objectives of the scheme are being met and to assist a student having any problem regarding specific assignments given to him by the industry-based supervisor.

## **7.5 Frequency of Visit**

Institutions should ensure that students placed on attachment are visited within one month of their placement. Other visits shall be arranged so that:

- (i) There is another visit six weeks after the first visit; and
- (ii) A final visit in the last month of the attachment.

## **7.6 Stipend for Students on SIWES**

The rate of stipend payable shall be determined from time to time by the Federal Government after due consultation with the Federal Ministry of Education, the Industrial Training Fund and NBTE.

## **7.7 SIWES as a Component of the Curriculum**

The completion of SIWES is important in the final determination of whether the student is successful in the programme or not. Failure in the SIWES is an indication that the student has not shown sufficient interest in the field or has no potential to become a skilled technician in his field. The SIWES should be graded on a fail or pass basis. Where a student has satisfied all other requirements but failed SIWES he may only be allowed to repeat another four months SIWES at his own expense.

## **7.8 Carriers and Academic Progression**

Graduate of the National Diploma (ND) in Multimedia can go for higher degree in HND or Bachelor of Science. He/She can work in Public Entertainment and Advertising Industries, Broadcasting and printing industries, Academia as studio support staff, Content provider, Entrepreneurships.

## **7.9 Further suggestions by the panelist;**

I) HND Developing

II) p

**National Board for Technical Education  
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P.M.B. 2239,  
Kaduna.**

**18<sup>th</sup> September, 2020**

**Curriculum and Module Specifications for ND Multimedia Technology**

## ND PROGRAMME IN MULTIMEDIA TECHNOLOGY

### CURRICULUM TABLE

#### ND 1 FIRST SEMESTER

<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>L</b>	<b>P</b>	<b>CH</b>	<b>CU</b>
GNS 101	USE OF ENGLISH I	2	-	2	2
GNS 111	CITIZENSHIP EDUCATION I	2	-	2	2
COM 111	INTRODUCTION TO COMPUTING	2	1	3	3
COM 115	COMPUTER APPLICATION PACKAGES	2	2	4	4
MMT 111	INTRODUCTION TO MULTIMEDIA	1	3	4	4
MMT 112	GRAPHIC DESIGN FOR MULTIMEDIA I	1	2	3	3
MMT 113	INTRODUCTION TO PHOTOGRAPHY	1	1	2	2
	<b>TOTAL</b>	11	9	20	20

**ND I SECOND SEMESTER**

<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>L</b>	<b>P</b>	<b>CH</b>	<b>CU</b>
GNS 102	COMMUNICATION IN ENGLISH I	2	-	2	2
GNS 121	CITIZENSHIP EDUCATION II	2	-	2	2
COM 122	INTRODUCTION TO INTERNET	1	2	3	3
MMT 123	INTRODUCTION TO DATABASES (MySQL)	2	2	4	4
MMT 124	GRAPHIC DESIGN FOR MULTIMEDIA II	1	3	4	4
MMT 125	MULTIMEDIA HARDWARE MAINTENANCE	1	3	4	4
MMT 126	INTRODUCTION TO ANIMATION	2	2	4	4
	<b>TOTAL</b>	11	12	23	23

**ND II FIRST SEMESTER**

<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>L</b>	<b>P</b>	<b>CH</b>	<b>CU</b>
GNS 201	USE OF ENGLISH II	2	-	2	2
MAC 216	MASS COMMUNICATION ETHICS	2	-	2	2
EED 126	INTRODUCTION TO ENTREPRENEURSHIP	2	1	3	3
COM113	INTRODUCTION TO PROGRAMMING	2	2	4	4
MMT211	VIDEO PRODUCTION	1	2	3	3
MMT212	MULTIMEDIA AUTHORIZING I	1	2	3	3
MMT213	WEB DESIGN	1	3	4	4
MMT214	SOUND PRODUCTION	1	2	3	3
MMT 215	DIGITAL IMAGING	1	2	3	3
	<b>TOTAL</b>	13	14	27	27

**ND II SECOND SEMESTER**

<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>L</b>	<b>P</b>	<b>CH</b>	<b>CU</b>
GNS 202	COMMUNICATION IN ENGLISH II	2	-	2	2
EED 216	PRACTICE OF ENTERPRENEURSHIP	1	2	3	3
MAC 226	MASS COMMUNICATION LAWS	2	-	2	2
MMT 221	MULTIMEDIA PROJECT MANAGEMENT	2	1	3	3
MMT 222	MULTIMEDIA AUTHORIZING II	1	3	4	4
MMT223	USER-CENTRED DESIGN FOR MULTIMEDIA	1	2	3	3
MMT 224	PROJECT	-	-	4	4
	<b>TOTAL</b>	9	8	21	21

PROGRAMME: NATIONAL DIPLOMA IN MULTIMEDIA TECHNOLOGY

COURSE: INTRODUCTION TO MULTIMEDIA

CODE: MMT113

PRE-REQUISITE: NONE

SEMESTER: 1

CREDIT UNIT: 4

DURATION: 15 WEEKS

GOALS: The course is designed to provide students with basic understanding of Multimedia technology and its areas of application.

## **General Objectives**

### **At the end of the course the students should be able to:**

1. Understand the basic concept of Multimedia
2. Understand Areas of Multimedia Application and their Delivery Platforms
3. Know concepts of Hypermedia, Hypertext and various multimedia Systems
4. Understand Linear (Non-interactive) and nonlinear (Interactive)
5. Appreciate the basic elements of Multimedia
6. Categorize the uses of Multimedia
7. Know the production lifecycle of Multimedia
8. Appreciate the requirements of Multimedia hardware
9. Outline the key social, economic and professional issues associated with Multimedia

<b>Programme:</b> National Diploma in Multimedia Technology		<b>Course Code:</b>	MMT113	<b>Contact Hours:</b> 4 hours /week		
<b>Course:</b> Introduction to Multimedia				<b>Theoretical:</b> 1 hours /week		
Year: 1 Semester: 1		<b>Pre-requisite:</b>	None	<b>Practical:</b> 3 hours /week		
<b>GOAL:</b> The course is designed to provide students with basic understanding of Multimedia technology and its areas of application.						
<b>COURSE SPECIFICATION:</b> Theoretical Contents				Practical Contents:		
1. <b>General Objectives:</b> 1.0 Understand the basic concept of Multimedia						
WEEK	Specific Learning Objective	Teachers Activities	Learning Resources	Specific Learning Objectives	Teachers Activities	Evaluation
	At the end of the lessons the students should be able to : 1.1 Define Multimedia 1.2 Trace the historical development of Multimedia. 1.3 List five elements of Multimedia 1.4 Explain the characteristics of Multimedia 1.5 Describe the uses of Multimedia 1.6 Enumerate the advantages and disadvantages of Multimedia	Give different definitions of the term Multimedia and explain the five elements of Multimedia i.e text, image, audio, video and animation	Multimedia Room: White board. Multimedia PC with Projector. Presentation slides.	Identify the elements of Multimedia	Show students the elements of Multimedia	Explain Multimedia
WEEK	1. <b>GENERAL OBJECTIVE:</b> 2.0 Understand Areas of Multimedia Application and their Delivery Platforms					
	2.1 Lists areas of	Explain the areas of Multimedia application	Multimedia Room: White			Identify some Multimedia

	<p>Multimedia application</p> <p>2.2 Describe the use of 2.1</p> <p>2.3 List Multimedia delivery platforms such as: websites, blogs etc</p> <p>2.4 Describe the uses of Multimedia delivery platforms</p> <p>2.5 Categories multimedia applications and delivery platforms such as: 2D, 3D Interactive and Non-Interactive etc</p> <p>2.6 Identify challenges of Multimedia applications and delivery platforms</p>	<p>and delivery platforms</p> <p>Identify challenges of Multimedia delivery platforms</p>	<p>board.</p> <p>Multimedia PC with Projector.</p> <p>Necessary software.</p> <p>Network/Internet Connection,</p> <p>Presentation slides</p>			<p>applications and delivery platforms</p>
3	<p>1. <b>GENERAL OBJECTIVE:</b> 3.0 Know the concepts of Hypermedia, Hypertext and various multimedia Systems</p>					
	<p>3.1 Define Hypermedia and Hypertext</p> <p>3.2 List Multimedia systems</p>	<p>Explain Hypermedia and Hypertext in the context of Multimedia</p> <p>Give example of Multimedia systems such</p>	<p>Multimedia Room: White board.</p> <p>Multimedia PC with Projector, presentation</p>			<p>Explain the concepts of Hypermedia and Hypertext and state the differences.</p>

	3.3 Describe Multimedia systems	as analog system, computer based system, Text processing	slides			
WEEK	1. <b>GENERAL OBJECTIVE:</b> 4.0 Understand Linear (Non-interactive) and nonlinear (Interactive) Multimedia					
	4.1 Explain Linear (Non-Interactive) and non-linear (interactive) Multimedia  4.2 Distinguish between Linear (Non-Interactive) and non-linear (interactive) Multimedia  4.3 Give examples of 4.1	Explain Linear and Non-linear Multimedia with relevant examples.	Multimedia Lab: White board. Multimedia PC with Projector, presentation slides	Practice the use of linear and non-linear Multimedia.	Demonstrate how to use linear and non-linear Multimedia	Differentiate between Linear and Non-linear Multimedia
WEEK	1. <b>GENERAL OBJECTIVE:</b> 5.0 Appreciate the basic elements of Multimedia					
	5.1 Identify the use of basic elements of Multimedia  5.2 Explain each in 5.1 above  5.3 State the limitations associated with element of Multimedia	Explain the use and limitations of elements of Multimedia	Multimedia Lab: White board. Multimedia PC with Projector, presentation slides	Identify each of the elements of Multimedia	Show the students the elements of Multimedia and their uses	State the uses and limitations of the basic elements of Multimedia

WEEK	<b>GENERAL OBJECTIVE: 6.0</b> Categorize the uses of Multimedia					
	<p>6.1 Explain the uses of Multimedia in:</p> <ul style="list-style-type: none"> <li>○ Education</li> <li>○ Business</li> <li>○ Entertainment</li> <li>○ Games</li> </ul> <p>6.2 Identify imaging trends in Multimedia</p>	<p>Discuss the uses of Multimedia in:</p> <ul style="list-style-type: none"> <li>○ Education</li> <li>○ Business</li> <li>○ Entertainment</li> <li>○ Games</li> </ul> <p>Describe imaging trends in Multimedia such as artificial intelligence, virtual reality, internet of things, 5G.</p>	<p>Multimedia Room: White board. Multimedia PC with Projector, presentation slides</p>			<p>Explain the uses of Multimedia in:</p> <ul style="list-style-type: none"> <li>○ Education</li> <li>○ Business</li> <li>○ Entertainment</li> </ul> <p>Games</p> <p>Identify imaging trends in Multimedia</p>
WEEK	<b>1. GENERAL OBJECTIVE: 7.0</b> Know the production lifecycle of Multimedia					
	<p><b>7.1</b> Describe the production lifecycle of Multimedia</p> <p><b>7.2</b> Explain the key roles in each stage of the lifecycle of Multimedia production</p>	<p>Explain the production lifecycle of Multimedia.</p> <p>Explain key roles with Illustration.</p>	<p>Multimedia Room: White board. Multimedia PC with Projector, presentation slides</p>	<p>Illustrate the production lifecycle of Multimedia showing each roles in each stage of the lifecycle.</p>	<p>Guide students through the Illustrate of the production lifecycle of Multimedia</p>	<p>Diagrammatically explain the production lifecycle of Multimedia</p>
WEEK	<b>GENERAL OBJECTIVE: 8.0</b> Appreciate the requirements of Multimedia hardware					
	<p>1.1 Define Multimedia Hardware components.</p> <p>1.2 List Multimedia hardware components</p>	<p>Explain the Multimedia hardware devices/equipment.</p>	<p>Multimedia Lab: White board. Multimedia PC with Projector, presentation</p>	<p>Identify Multimedia devices/equipment</p>	<p>Show students Multimedia devices/equipment</p>	<p>List and explain the functions of Multimedia devices/equipment that you know.</p>

	1.3 Describe the functions of hardware components identified in 8.2		slides			
<b>WEEK</b>	<b>GENERAL OBJECTIVE:</b> 9.0 Outline the key social, economic and professional issues associated with Multimedia					
	9.1 Identify the key social issues associated with Multimedia  9.2 Identify the key economic issues associated with Multimedia  9.3 Identify the key professional issues associated with Multimedia	Explain the key social, economic and professional issues associated with Multimedia	Multimedia Room: White board. Multimedia PC with Projector, presentation slides			What are the social, economic and professional issues associated with Multimedia

**Assesment**

Type of Assessment	Purpose and Nature of Assessment	Weighting (%)
Practical / Projects	Portfolio of work to be assessed by the teacher	100
Total		100

<b>PROGRAMME:</b>	-	<b>National Diploma in Multimedia Technology</b>
<b>SEMESTER:</b>	-	First
<b>COURSE TITLE:</b>	-	<b>GRAPHIC DESIGN FOR MULTIMEDIA I</b>
<b>DURATION</b>	-	Lecture 1hr                  Practicals 2hrs
<b>CREDIT UNIT:</b>	-	3
<b>CODE NO:</b>	-	MMT 112
<b>GOAL:</b>	-	The course is designed to acquaint students with the use of graphic design in Multimedia application

**GENERAL OBJECTIVES:**

On completion of this module, the students should be able to:

1. Understand the meaning of graphic design
2. Know the elements and principles of design
3. Utilize the elements and principles of design.
4. Understand perspective and the different types of perspectives
5. Understand colour in design
6. Appreciate the concept and components of Multimedia in design.
7. Use graphic design for Multimedia application

8. Create a graphic design project for Multimedia application

<b>PROGRAMME: NATIONAL DIPLOMA IN MULTIMEDIA TECHNOLOGY</b>						
<b>COURSE: GRAPHIC DESIGN FOR MULTIMEDIA I</b>			<b>COURSE CODE: MMT 112</b>		<b>CONTACT HOURS: 3</b>	
<b>GOAL: The course is designed to acquaint the students with the use of graphic design in Multimedia application</b>						
<b>COURSE SPECIFICATION: THEORETICAL CONTENT</b>				<b>PRACTICAL CONTENT</b>		
<b>General Objectives:1.0: Understand the meaning of graphic design</b>						
<b>Week</b>	<b>Specific Learning Outcomes</b>	<b>Teacher’s Activities</b>	<b>Resources</b>	<b>Specific Learning Outcomes</b>	<b>Teacher’s activities</b>	<b>Evaluation</b>
	1.1 Define Design 1.2 Give the historical background of design 1.3 Define graphic design 1.4 Describe principles of good design.	Explain Design  Explain graphic design contents from selected design	Picture Textbooks Whiteboards Markers Cleaners Projector	Identify the elements of design	Show students graphic design contents from selected designs,	Explain graphic design
<b>General Objective 2.0: Know the elements and principles of design</b>						
	2.1 Explain the elements and principles of design  2.2 Define the following: i Elements of design: • Line • shape • texture • space	Explain the elements and principles of design.	Pictures, textbooks, white board, markers, cleaners, projector  Whiteboards Markers	Illustrate the Elements of Design  Illustrate the Principles of Design	Demonstrate the use of principles and elements of design	list some design materials   List the elements of

	<ul style="list-style-type: none"> <li>• size</li> <li>• value</li> <li>• colour</li> </ul> <p>ii Principles of design:</p> <ul style="list-style-type: none"> <li>• balance</li> <li>• unity</li> <li>• pattern</li> <li>• variety</li> <li>• emphasis</li> <li>• contrast</li> <li>• movement</li> <li>• proportion</li> </ul>		Cleaners Projectors Textbooks			design
2.3	<p>Explain line and its attributes:</p> <ul style="list-style-type: none"> <li>- Contour and outline</li> <li>- Direction</li> <li>- Movement etc</li> </ul>	Discuss the attributes of contours and outline direction etc.	Paper, Eraser, Pencil, Projectors	Draw lines, contours, direction, movement	Ask student to make free hand sketches of lines, contours	Discuss the attributes of contours and outline direction
2.4	Explain shape in design	Discuss various shapes and their formation.	Paper, Eraser, Pencil, Projectors	Demonstrate the use of various shapes with diagrams	Ask the student to make compositions with shapes	
2.5	Explain form in design	Explain form as in cubes, sphere, pyramids, cylinders etc. Relate form with shapes: cubes,	Pictures, textbooks,	Draw cubes, spheres, cylinders	Ask the students to draw cubes, sphere, cylinders etc.	

	<p>2.6 Explain: value, tonal gradation, shade and shadows in design.</p> <p>2.7 Explain techniques of shading hatching, cross hatching, blurring</p> <p>2.8 Explain different forms of texture</p> <p>2.9 Explain pattern</p>	<p>sphere, pyramid, cylinders</p> <p>Discuss various forms in design and tonal gradation</p> <p>Discuss techniques of shading, hatching, cross hatching, blurring etc.</p> <p>Discuss different forms of texture</p> <p>Discuss different forms of pattern</p>	<p>projectors</p> <p>Paper, Eraser, Pencil, Projectors</p> <p>Textured materials; fabric mirrors, tree barks etc</p> <p>Pictures, projector</p>	<p>Demonstrate values and tones with drawing</p> <p>Draw different textures and patterns</p>	<p>Ask the students to draw still life objects showing light, values, shadows and tones</p> <p>Ask the student to draw/paint patterns and texture on shapes and forms.</p>	
<b>General Objectives: 3.0 Know how to utilize the elements and principles of design.</b>						
	<p>3.1 Explain how the elements of design are used in picture composition</p>	<p>Discuss how the elements of design are used in picture composition</p>	<p>Camera, paper, pencil etc.</p>	<p>Make a freehand drawing of objects using elements of design</p> <p>Combine elements of design to form a design</p>	<p>Guide student in making freehand drawing of objects</p>	<p>Discuss how the elements of design are used in picture composition .</p>

<b>General Objectives: 4.0 Understand perspective and the different types of perspectives</b>						
4.1 Define perspective	Explain vanishing point, horizon	Textbooks Maker board Projector	Illustrate perspective.	Ask student to illustrate perspective	Explain vanishing point, horizon	
4.2 Explain different types of perspectives - Linear perspective - Foreshortening - Atmospheric perspective - Isometric perspective - Vanishing point	Discuss types of perspectives				Discuss types of perspectives	
<b>General Objectives: 5.0 Understand colour in design</b>						
5.1 Define colour in design	Explain colour.	Pictures Projector Whiteboard Colour brushes	Construct the colour wheel	Guide students to construct the colour wheel.	Differentiate between colour wheel and colour chart	
5.2 Differentiate between colour as light and colour as pigment	Compare the following terms: - RGB - CYMK	Projector Photographs	Design a colour charts showing the classification of colour	Illustrate to students how to design a colour chart	Explain the properties of colour	
5.3 Explain the properties of colour: Hue Colour value	identify the properties of colour: Hue, value, intensity (Chroma, Saturation)					

	<p>Intensity (Chroma/saturation)</p> <p>5.4 Explain primary Colours</p> <p>5.5 Explain secondary Colours</p> <p>5.6 Explain tertiary Colours</p> <p>5.7 Explain colour harmony.  - Monochrome  - Polychrome  - Analogous</p> <p>5.8 Explain colour Scheme</p>	<p>Classify colour into Primary, Secondary colour, Tertiary colours</p> <p>Complementary colour, Split complementary, Double split complementary colours, colour harmony etc.</p> <p>Discuss different colour schemes</p>	<p>Colour wheel  Chart  Projector  Whiteboard  Makers  Pigment  Brushes</p>			
<b>General Objectives: 6.0</b> Appreciate the concept and components of Multimedia in design.						
	<p>6.1 Explain the concept of Multimedia</p> <p>6.2 Explain key components of Multimedia (Animation, Motion graphics, web design etc)</p>	<p>Define Multimedia</p> <p>Explain the concept off Multimedia with pictures of finished works</p>	<p>Design Studio, textbooks, pictures, white board, markers, cleaners, PC with</p>	<p>Identify the role of design in Multimedia</p>	<p>Show students different graphic design contents for Multimedia applications</p>	<p>Explain how graphic design is used in the following:  Animation,  Motion graphics,</p>

			projector			web design
<b>General Objectives: 7.0</b> Use graphic design for Multimedia application						
7.1 Explain how graphic design can be created for Multimedia application.  7.2 Identify the role of graphic design in a Multimedia environment	Explain graphics in Multimedia design.	Design Studio, textbooks, pictures, white board, markers, cleaners, PC with projector	Identify the use of lines, colour, shape, value, size etc in Multimedia contents.	Show students different Multimedia contents	Differentiate between the following Multimedia contents: Animation, Motion graphics, web design.	
<b>General Objectives: 8.0</b> Create a graphic design project for Multimedia application						
8.1 Explain key roles of graphic design in a Multimedia presentation	Describe a banner for Web application  Describe a simple motion graphic project for film application.  Explain with pictures of finished Multimedia design	Design Studio, textbooks, pictures, white board, markers, cleaners, PC with projector	Identify the role of design in Multimedia	Show students different graphic design contents for Multimedia applications	Explain the following: Web application, motion graphics.	

### Recommended Books

- i. Computer Graphics: Principles and Practice
- ii. Fundamentals of Computer Graphics
- iii. Interactive Computer Graphics
- iv. Essentials of Animation

- v. Foundation Actionscript 3.0 Animation: Making Things Move
- vi. Programming for Designers

**PROGRAMME:** - **National Diploma in Multimedia Technology**

**SEMESTER:** - First

**COURSE TITLE:** - INTRODUCTION TO PHOTOGRAPHY

**DURATION** - Lecture 1 hr

**UNIT:** - Lecture 1                      Practical 1

**CODE NO:** - MMT 113

**GOAL:** - This course is designed to introduce students to photography

**GENERAL OBJECTIVES:**

On completion of this course, the student should be able to:

- 1.0 Understand Photography
- 2.0 Understand the importance and use of the photography
- 3.0 Give historical development of photography
- 4.0 Know the camera
- 5.0 Understand the importance of lenses in a camera
- 6.0 Understand the importance of lighting in photography.

<b>PROGRAMME: NATIONAL DIPLOMA IN MULTIMEDIA</b>						
<b>COURSE: INTRODUCTION TO PHOTOGRAPHY</b>			<b>COURSE CODE: MMT 113</b>		<b>CONTACT HOURS: 2</b>	
<b>GOAL: This course is designed to introduce the student to photography</b>						
<b>COURSE SPECIFICATION: THEORETICAL CONTENT</b>				<b>PRACTICAL CONTENT</b>		
<b>General Objectives: 1.0 Understand photography</b>						
<b>Week</b>	<b>Specific Learning Outcomes</b>	<b>Teacher's Activities</b>	<b>Resources</b>	<b>Specific Learning Objective</b>	<b>Teacher's activities</b>	<b>Resources</b>
	1.1 Define Photography  1.2 Explain the importance of light in Photography  1.3 State the qualities of a good photograph  1.4 State the different areas of photography. News, Documentary, Sports, Portraiture, Aerial Photography, Micro Photography, Aquatic Photography, Glamour Photography etc.	Explain the term Photography.	Books, Journals, Magazine, Internet.			

<b>General Objectives: 2.0 Understand the importance and use of Photography</b>						
2.1	Explain Photography and social media.	Discuss social media in relation to photographs.	Multimedia equipment, Books, Journals, Magazines.			
2.2	Explain differences between Still Photographs and motion Pictures.	Differentiate between still photography and motion pictures.				
<b>General Objectives: 3.0 Know the History of Photography</b>						
3.1	Explain the historical development of photography from the era of the camera obscura to the present digital age.	Identify the contributors in the development of photography.	Photographs , Books.			
3.3	Explain the development of Photography in Nigeria.	Discuss the state of photography during this period.				
<b>4.0 General Objectives: Know the Camera</b>						

	<p>4.1 Define camera .</p> <p>4.2 Differentiate between digital and analogue cameras.</p> <p>4.3 List different types of cameras eg. Twin lens reflex(TLR); Single lens Reflex (SLR); Compact camera;</p> <p>4.4 Know how to use the camera to shoot and capture images.</p> <p>4.5 Explain the following terms: aperture; Shutter speed; Film; Film speed; ISO; ASA; Depth of focus; f-stops/f-numbers; depth of field; Digital sensors; Pixels etc</p>	<p>Explain the functions of a camera.</p> <p>Differentiate the cameras and their features..</p> <p>Discuss the the listed terms and their importance in photography.</p>	<p>Sample of different cameras</p> <p>SLR camera Film; Etc.</p>	<p>Identify different types of cameras</p> <p>Demonstrate how to use a camera to take pictures.</p>	<p>State the merits and demerits of the different cameras</p> <p>Show how to handle a camera to take shots.</p>	
<p><b>General Objectives: 5.0 Understand the importance of lenses in a camera</b></p>						
	<p><b>5.1</b> Explain what a lens is.</p>	<p>Discuss the importance of lens in</p>	<p>Sample of a lens</p>			

	<b>5.2</b> Enumerate different types of lenses such as: Normal, telephoto; zoom; wide angle lenses etc.	a camera. Explain the uses of the different types of lenses	Sample of different lenses.			
<b>General Objectives: 6.0</b> Understand the importance of lighting in photography.						
	6.1 Define light	Explain the concept of light as it affects photography.	Natural light; Lighting equipment			
	6.2 State the theory and behaviour of light	Explain the characteristics of light.	Natural light; Lighting equipment			
	6.2 Differentiate between natural and artificial light	Discuss the need to provide artificial lighting in the photographic studio.	Electronic flash; halogen; tungsten etc. umbrella; reflector, etc..			
	6.2 Explain the various types of light: natural and artificial lighting.					

### Recommended Books

- i. Introduction to Photography
- ii. The Camera
- iii. Photoshop for Beginners

<b>Program: NATIONAL DIPLOMA IN MULTIMEDIA TECHNOLOGY</b>	<b>Course Code:</b>	<b>MMT 123</b>	<b>Contact Hours: 4 hours/week</b>
<b>Subject/Course: Introduction to Databases (MySQL)</b>			<b>Theoretical: 2 hours/week</b>
<b>Year: One</b> <b>Semester: Two</b>	<b>Pre-requisite:</b>		<b>Practical: 2 hours /week</b>

**General Objectives** The course is designed to enable students work with database system.

1. Understand basic concepts of database.
2. Understand how to work with Tables.
3. Understand how to work with Queries.
4. Understand how to work with Forms.
5. Understand how to work with Reports.

Program: NATIONAL DIPLOMA IN MULTIMEDIA TECHNOLOGY		Course Code:	MMT 123	Contact Hours: 3 hours/week		
Subject/Course: Databases				Theoretical: 1 hours/week		
Year: Two Semester: Two		Pre-requisite:		Practical: 2 hours /week		
	Theoretical Content			Practical Content		
<b>General Objective 1.0:</b> To understand basic concept of database.						
Week	Learning Outcomes	Teacher's activities	Resources	Learning Outcomes	Teacher's activities	Resources
1	1.7 Define a database 1.8 Explain why a database is needed. 1.9 Identify the basic features of a database 1.10 Describe how a database can be used in an organization. 1.11 Enumerate the advantages of databases.	Explain a database  Explain the importance of storing, organizing, and retrieving data  Identify the elements of a database. How a database is organized in terms of tables, records, fields,  Explain how databases can be used in an organization to store employee data, client data, product data, etc	Multimedia Lab: PC connected to an OHP  Power point presentation of lectures  Database Management System  Smart board/ white board.	Identify the elements of a database.	Navigate a database to show students fields, records, and tables.	Explain the concept of databases.
2	1.12 List the functions of a	Describe Database Management System.		Explore the features of a	Show the features of a Database	What is a DBMS?

	<p>Database Management System (DBMS).</p> <p>1.13 Explain the relationship between a database and a DBMS.</p>	<p>Explain the functions of Database Management Systems.</p>		<p>Database Management System</p>	<p>Management System.</p>	<p>Explain the functions of a DBMS.</p>
<b>General Objective 2.0: Understand how to work with Tables.</b>						
3	<p>2.1 Explain the functions of a database table.</p> <p>2.2 List the elements of a table.</p> <p>2.3 List the steps in setting the properties of a table.</p>	<p>Explain Database Table</p> <p>Discuss the functions of a database Table.</p> <p>Explain Records and their relationship to a database table.</p> <p>Enumerate the steps in:</p> <p>i. Creating a table in a new database</p> <p>ii. Creating a table in an existing database.</p> <p>Explain how to set the properties of a table.</p>	<p>Multimedia Lab: PC connected to an OHP</p> <p>Power point presentation of lectures</p> <p>Database Management System</p> <p>Smart board/ white board.</p>	<p>Identify the elements of a database table</p> <p>Enter data into sample tables.</p>	<p>Illustrate the features and elements of a database table using the database templates provided in MS Access.</p> <p>Show how to enter data into tables using templates provided in MS Access.</p>	<p>Describe a database table.</p>
4-5	<p>2.4 Enumerate different datatypes.</p> <p>2.5 Add fields to a</p>	<p>Explain datatypes and their characteristics.</p> <p>Explain the steps in</p>	<p>Multimedia Lab: PC connected to an OHP</p>	<p>Create fields in a database table and specify data types.</p>	<p>Demonstrate how to create fields in a database table and specify data</p>	<p>Explain datatypes and their characteristics.</p>

	<p>database table.</p> <p>2.6 Select a field and set as the Primary Key of a table.</p> <p>2.7 Change the attributes of a field.</p> <p>2.8 Set validation rules to fields of a table.</p>	<p>adding fields to a database table and specifying their data types.</p> <p>Define primary key.</p> <p>Explain the significance of a primary key to a database table.</p> <p>Enumerate the steps in creating a primary key.</p> <p>Explain how to change field format and attributes such as: field size, field name, date format.</p> <p>Explain data validation.</p> <p>List the steps involved in setting validation rules for a field.</p>	<p>Power point presentation of lectures</p> <p>Database Management System</p> <p>Smart board/ white board.</p>	<p>Create a primary key.</p> <p>Change some attributes of a field like the data type or the field length.</p> <p>Set validation rules for some of the fields in a table.</p>	<p>types.</p> <p>Demonstrate the process of creating a primary key.</p> <p>Demonstrate how to change attributes of fields in a database table.</p> <p>Illustrate how to set validation rules for some of the fields in a table.</p>	<p>Explain the significance of a primary key.</p> <p>Why is data validation important.</p>
6	<p>2.9 Explain the concept of a relational Database.</p> <p>2.10 Enumerate the steps involved in creating relationships in a table.</p>	<p>Define a relational database.</p> <p>List the features of a relational database.</p> <p>Define foreign key.</p> <p>Explain the significance</p>		<p>Create two tables in a database and create a one to one relationship between them.</p> <p>Create a one to much</p>	<p>Illustrate how to create one to one relationship between tables.</p> <p>Illustrate how to create one to many relationships</p>	<p>What is relational Database</p>

		<p>of a foreign key in relational databases.</p> <p>Explain types of relationship such as one-to-one and one-to-many between tables.</p> <p>State the rules of relationships, such as fields that join tables are not deleted as long as links to another table exist.</p>		<p>relationship in a database with multiple tables.</p> <p>Delete relationships between tables.</p> <p>Apply rule(s) to relationships such that, fields that join tables are not deleted as long as links to another table exist.</p>	<p>between tables.</p> <p>Show how to delete relationships between tables.</p> <p>Demonstrate how to apply rule(s) to relationships such as fields that join tables are not deleted as long as links to another table exist.</p>	
<b>General Objective 3.0:</b> Understand how to work with Queries						
7	<p>3.1 Define query</p> <p>3.2 Enumerate the importance of queries in a database system.</p> <p>3.3 Explain how queries can filter information from a single table and from multiple tables.</p>	<p>Explain a Query.</p> <p>Explain the uses of a query in a database.</p> <p>Explain Structured Query Language (SQL).</p> <p>Explain the significance of designing queries.</p> <p>Explain how queries can be used to filter information from various databases.</p>	<p>Multimedia Lab: PC connected to an OHP</p> <p>Power point presentation of lectures</p> <p>Database Management System</p> <p>Smart board/white board.</p>	<p>Create a query using a query wizard.</p> <p>Create a query in in Design View.</p>	<p>Demonstrate how to create a query using a query wizard.</p> <p>Demonstrate how to create a query in Design View.</p>	<p>How are queries used to filter information in database</p>

		Explain how to specify query criteria.				
<b>General Objective 4.0:</b> Understand how to work with Forms.						
8	<p>4.1 Explain the concept and function of Forms.</p> <p>4.2 Differentiate between Bound and Unbound Forms.</p> <p>4.3 Explain the functions of form controls.</p> <p>4.5 List the functions of Forms.</p> <p>4.6 Enumerate types of forms.</p>	<p>Discuss the concept of reports.</p> <p>Explain the importance and uses of reports.</p> <p>Explain the different sections of a report.</p> <p>Explain a database Form</p> <p>Explain how to use a form to enter, modify, and delete records.</p> <p>Discuss Form controls as; textbox, combo Box, label, image, etc.</p>	<p>Multimedia Lab: PC connected to an OHP</p> <p>Power point presentation of lectures</p> <p>Database Management System</p> <p>Smart board/ white board.</p>	<p>Create a blank form.</p> <p>Create a data entry form from and existing table.</p> <p>Create a form from a query.</p> <p>Practice navigating through the records of a database using a form.</p>	<p>Demonstrate how to create a blank form.</p> <p>Demonstrate how to create a data entry form from and existing table.</p> <p>Illustrate how to create a form from a query.</p> <p>Demonstrate how to save and delete a form.</p> <p>Demonstrate how to navigate records of a table using a form.</p>	<p>Explain the function of foams in a database.</p>
<b>General Objective 5.0:</b> Understand how to work with Reports.						

	<p>5.1 Define a report.</p> <p>5.2 List the different sections of a report.</p> <p>5.3 Enumerate the advantages of using a report.</p> <p>5.4 Identify controls for reports.</p>	<p>Explain the concept of reports.</p> <p>Explain the process of planning for a report.</p> <p>Explain the significance of reports in a database system.</p> <p>Describe the functions of controls used in reports.</p>	<p>Multimedia Lab: PC connected to an OHP</p> <p>Power point presentation of lectures</p> <p>Database Management System</p> <p>Smart board/ white board.</p>	<p><b>The ability to:</b></p> <p>Identify the different sections of a report.</p> <p>Identify the controls used in reports.</p> <p>Create and save a report based on a table, query.</p> <p>Add and modify text in Headers, Footers in a report.</p>	<p><b>To Demonstrate how to</b></p> <p>Illustrate the different sections of a report.</p> <p>Illustrate different control used in reports.</p> <p>Create and save a report based on a table, query.</p> <p>Add and modify text in Headers, Footers in a report.</p>	<p>What is a report and why is it important in databases?</p> <p>List some controls used in reports and explain their functions.</p>
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Course work 0%; Course tests 20%; Practical lab activities 50%; Examination 30%

### **Recommended Books**

- i. Microsoft Access Step by Step
- ii. Introduction to Database Management System
- iii. Concise Guide to Databases: A Practical Introduction
- iv. Hands-on Database: An Introduction to Database Design and Development
- v. An Introduction to Relational Database Theory

PROGRAMME: NATIONAL DIPLOMA IN MULTIMEDIA TECHNOLOGY  
COURSE: GRAPHIC DESIGN FOR MULTIMEDIA II  
CODE: MMT 124  
PRE-REQUISITE: MMT 112  
SEMESTER: 2  
CREDIT UNIT: 4  
DURATION: 15 WEEKS  
GOALS: The course is designed to enable students demonstrate proficiency in digital image formatting: importing, creating, editing and saving digital images for creating multimedia contents.

### **General Objectives**

1. Understand graphic design
2. Understand computer graphic design
3. Use computer graphic image formatting software to: import, create, edit and save contents of a multimedia project
4. Create a multimedia design project (animation, web design, film, game, motion graphics etc.)

<b>Programme:</b> National Diploma in Multimedia Technology		<b>Course Code:</b>	MMT124	<b>Contact Hours:</b> 5 hours /week		
<b>Course:</b> Graphic Design for Multimedia II				<b>Theoretical:</b> 1 hours /week		
<b>Year:</b> 1	<b>Semester:</b> 2	<b>Pre-requisite:</b>	MMT112	<b>Practical:</b> 3 hours /week		
<b>GOAL:</b> The course is designed to enable students to demonstrate proficiency in digital image formatting: importing, creating, editing and saving digital images for creating multimedia contents						
<b>COURSE SPECIFICATION:</b> Theoretical Contents				Practical Contents:		
<b>WEEK</b>	<b>General Objectives: 1.0 Understand advanced concepts in graphic design</b>					
1	<b>Specific Learning Objective</b>	<b>Teachers Activities</b>	<b>Learning Resources</b>	<b>Specific Learning Objectives</b>	<b>Teachers Activities</b>	<b>Learning Resources</b>
	1.1 Define the concept of graphic design 1.2 Describe principles of good design 1.3 Give the historical background of graphic design	Explain the concept of design  Explain the principles of good design (innovative, usefulness, aesthetics, durable, original)  Show graphic design contents from selected designs	Picture Textbooks Whiteboards Markers Cleaners Projector			Narrate the historical background of graphic design  Explain the principles of good design
<b>WEEK</b>	<b>General Objectives: 2.0 Understand computer graphic design</b>					

	<p>2.1 Define computer graphics</p> <p>2.2 Describe the 2 major kinds of computer graphics (vector and raster)</p> <p>2.3 Describe the major uses of computer graphics (film, video games, photo-editing, modelling, advertisement etc.)</p>	<p>Explain computer graphics</p> <p>Identify the 2 major kinds of computer graphics (vector and raster)</p> <p>Explain the uses of computer graphics</p>	<p>Multimedia Lab: White board. Multimedia PC with Projector. Necessary software. Network/Internet Connection. Scanner</p>	<p>Create: vector and raster graphics using computer graphic software.</p> <p>Create and edit images using some imaging tools</p> <p>Proficiently use pen, pencil, colour and paint tools to shade a vector object</p>	<p>Assist students to use computer graphic software to create: vector and raster graphics</p> <p>Demonstrate to students how to create and edit images using some imaging tools</p> <p>Illustrate to students how to use pen, pencil, colour and paint tools to shade a vector object</p>	<p>State some vector graphics software</p> <p>List some animation 2D software</p> <p>Use vector-based technique to graphic image.</p> <p>Use raster based-technique to create graphic image</p>
WEEK	<b>General Objectives: 3.0 Use computer graphic image formatting software to: import, create, edit and save contents of a multimedia project</b>					
	<p>3.1 Explain the process of editing shapes</p> <p>3.2 Appreciate the use of select and align effects</p> <p>3.3 Describe how to</p>	<p>Discuss the process of drawing, editing aligning and transforming shapes.</p> <p>Explain how to use paintbrush and</p>	<p>Multimedia lab: White board. Multimedia PC with Projector. Necessary software. Network/Internet</p>	<p>Create and edit shapes</p> <p>Apply select and align effects</p> <p>Transform Objects in design</p>	<p>Illustrate to students how to create and edit shapes</p> <p>Guide students on how to</p>	<p>Explain how to use computer graphic image formatting software to: import,</p>

	transform an object in computer graphics	colour in transforming types.	Connection Scanner		apply select and align effects	create, edit and save contents of a multimedia project
3.4	Describe the techniques of drawing a shape using the pen and pencil tools	Explain how to import image from a third party source and emboss it.		Draw a shape using the pen and pencil tools	Demonstrate how to transform Objects in design	
3.5	Use colour and paint tools to create a design	Explain how to use selection, composition and manipulate type in Multimedia design.		Use the colour and paint tools	Illustrate how to draw a shape using the pen and pencil tools	
3.6	Explain how to use type tools and transformations in design	Describe the significance of colour models including RGB and CMYK.		Use type tools and transformations in design	Demonstrate how to use colour and paint tools	
3.7	Explain how to create and manipulate layers			Create and manipulate layers	Show students how to use type tools and transformations in design	
3.8	Explain the importance and procedures of creating the emboss-effect on text			Apply the emboss effect on text	Guide students on how to create and manipulate layers	
3.9	Describe the range of functionality provided by a typical bitmap editor			Describe the range of functionality provided by a typical bitmap editor	Show students	
3.10	Identify sources for third party bitmap images			Identify sources for third party bitmap images		

	<p>3.11 Explain how to use Layers in image editing design</p> <p>3.12 Describe how to use selections in multimedia design</p> <p>3.13 Explain the process of Masking images in photo-editing</p> <p>3.14 Describe how to perform compositing in multimedia design</p> <p>3.15 Describe how to create and manipulate type in multimedia design</p> <p>3.16 Explain colour management in multimedia design</p>			<p>Use Layers in design</p> <p>Work with selections in multimedia design</p> <p>Use Masks and Channels</p> <p>Perform compositing in multimedia design</p> <p>Create and manipulate type in multimedia design</p> <p>Manage colour in multimedia design</p>	<p>how to apply the emboss effect on text</p> <p>Illustrate the range of functionality provided by a typical bitmap editor</p> <p>Demonstrate how to import different bitmap and vector images.</p> <p>Guide students on how to use Layers in design</p> <p>Demonstrate to students how to create and manipulate type in multimedia design</p>	
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WEEK	<b>General Objectives: 4.0 Create a multimedia design project (animation, web design, film, game, motion graphics etc.)</b>					
4	4.1 Differentiate between animation and web design	Explain the processes of creating a multimedia animation project for web, film, game and motion graphic applications	Multimedia lab: White board. Multimedia PC with Projector. Necessary software. Network/Internet Connection Scanner	Explain forms of computer graphic design  Demonstrate the processes of creating a computer graphic design project for web application  Develop an animated web design concept to advertise a product	Demonstrate to students the processes of creating a multimedia animation project for web, film, game and motion graphic applications	Create a multimedia design project

### Recommended Books

- i. Computer Graphics: Principles and Practice
- ii. Fundamentals of Computer Graphics
- iii. Interactive Computer Graphics
- iv. Essentials of Animation
- v. Foundation Actionsript 3.0 Animation: Making Things Move
- vi. Programming for Designers

PROGRAMME: NATIONAL DIPLOMA IN MULTIMEDIA TECHNOLOGY  
COURSE: MULTIMEDIA HARDWARE MAINTENANCE  
CODE: MMT125  
PRE-REQUISITE: COM 111  
SEMESTER: 2  
CREDIT UNIT: 4  
DURATION: 15 WEEKS  
GOALS: The course is designed to enable students use multimedia hardware operation and maintenance.

### **General Objectives**

1. Understand how to perform basic PC maintenance
2. Understand how to perform PC upgrade.
3. Understand how to use diagnostic software
4. Understand how to perform basic maintenance of multimedia video equipment
5. Understand how to perform basic maintenance of multimedia audio equipment

<b>Programme:</b> National Diploma in Multimedia Technology		<b>Course Code:</b>	MMT125	<b>Contact Hours:</b> 5 hours /week		
<b>Course:</b> Multimedia HARDWARE MAINTENANCE				<b>Theoretical:</b> 1 hours /week		
<b>Year:</b> 1 <b>Semester:</b> 2		<b>Pre-requisite:</b>	ICT101	<b>Practical:</b> 3 hours /week		
<b>PROGRAMME: NATIONAL DIPLOMA IN MULTIMEDIA TECHNOLOGY</b>						
<b>COURSE: Multimedia Hardware Operation and Maintenance</b>		<b>COURSE CODE:MMT125</b>	<b>CONTACT HOURS 5.0</b>			
<b>GOAL:</b> To enable students to begin hardware operation and maintenance.						
<b>COURSE SPECIFICATION:</b> Theoretical Contents			Practical Contents:			
<b>General Objective: 1.0</b> Understand how to perform basic PC maintenance						
WEEK	Specific Learning Objective	Teachers Activities	Learning Resources	Specific Learning Objectives	Teachers Activities	Learning Resources
1	1.1 Define PC maintenance.  1.2 Explain why PC maintenance is needed.	Explain the concept of PC maintenance.  Enumerate the reasons why PC maintenance is needed.  Explain typical hazards that threaten PC operations e.g. power fluctuation, power surge, dusty environment, excessive ambient temperature, viruses.	Multimedia lab. PC connected to an OHP. PowerPoint presentation of Lectures. Smart/White board			Why is PC maintenance important.  Explain typical hazards threatening the normal operation of PC.

		Discuss the need for regular data backups.				
<b>General Objective: 2.0 Understand how to perform PC upgrade</b>						
2	<p>2.1 List the hardware and software tools needed for component replacement.</p> <p>2.2 Explain how to check specifications and requirements of hardware components of a computer.</p>	<p>Discuss PC upgrade. Enumerate the reasons that would make PC upgrade necessary.</p> <p>Explain how to make a list of components to upgrade.</p> <p>Explain how to get prepared for a component change (obtaining the required hardware/software tools and components).</p> <p>Describe how to check and verify the specifications of new components against the new requirements.</p>	<p>Multimedia lab. PC connected to an OHP. PowerPoint presentation of Lectures. Smart/White board</p>	<p>Open a computer case and identify components for upgrading.</p> <p>Check the current computer components specifications.</p> <p>Choose components that matches the new hardware/software requirements.</p> <p>Verify specifications against requirements.</p>	<p>Guide students on how to: Open a computer case and identify components for upgrading.</p> <p>List the current computer components specifications.</p> <p>Choose components that match the new hardware/software requirements.</p> <p>Verify specifications against requirements.</p>	<p>Describe how to check and verify the specifications of new components against the new requirements.</p>
3	<p>2.3 Explain how to replace the computer keyboard and mouse.</p> <p>2.4 Differentiate between the different connection port types for keyboard and</p>	<p>Explain: How to choose a suitable keyboard and mouse which meets specific requirements. How to disconnect the old keyboard and mouse.</p>	<p>Multimedia lab. PC connected to an OHP. PowerPoint presentation of Lectures. Smart/White board</p>	<p>Connect different kinds of keyboard and mice to the system units.</p> <p>Upgrade the RAM of a computer by</p>	<p>Guide students on choosing the appropriate mouse and keyboard.</p> <p>Guide students on</p>	<p>Differentiate between SRAM and DRAM.</p> <p>List the steps involved in upgrading the</p>

	<p>mice.</p> <p>2.5 List the steps in replacing the RAM of a computer</p> <p>2.6 List the steps in replacing the RAM of a computer.</p> <p>2.7 Differentiate between SRAM and DRAM</p>	<p>How to connect the new keyboard and mouse.</p> <p>Explain the different types of connection ports for keyboard and mice.</p> <p>Explain how to choose a suitable memory which meets specific requirements.</p> <p>Explain the different types of RAM available.</p>		<p>installing one of a higher capacity.</p>	<p>how to connect keyboards and mice with different types of connection ports.</p> <p>To guide on selecting appropriate computer memory for installation.</p>	<p>RAM of a computer.</p>
4	<p>2.8 Explain the function of power supply unit.</p> <p>2.9 List the steps involved in installing a computer power supply unit.</p>	<p>Discuss the function of the power supply unit.</p> <p>How to choose a suitable power supply which meets specific requirements.</p> <p>How to uninstall the old power supply computer.</p> <p>How to install the new power supply.</p>	<p>Multimedia lab. PC connected to an OHP. PowerPoint presentation of Lectures. Smart/White board</p>	<p>Select a power supply unit that matches the requirements.</p> <p>Uninstall the old power supply unit and install the one.</p>	<p>Guide students on choosing appropriate computer power supply.</p> <p>Guide students on the process of installing and uninstalling computer power units.</p>	<p>Explain how to uninstall old power supply units and install new ones.</p>
5-6	<p>2.10 Explain the functions of a computer motherboard.</p> <p>2.11 Enumerate things to consider in selecting a computer motherboard.</p>	<p>Discuss the computer motherboard and its functions.</p> <p>Explain how to choose a suitable mainboard which meets specific requirements.</p>	<p>Multimedia lab. PC connected to an OHP. PowerPoint presentation of Lectures. Smart/White board</p>	<p>Select a motherboard which match some requirements.</p> <p>Uninstall the old motherboard and</p>	<p>Guide students to select a computer mainboard for installation.</p> <p>Guide students on the process of</p>	<p>Explain how to choose a suitable mainboard which meets specific requirements</p>

	<p>2.12 List the steps involved in replacing a computer motherboard.</p> <p>2.13 Describe how to replace the computer CPU.</p>	<p>Explain how to replace a motherboard.</p> <p>Explain how to select a CPU which meets specific requirements.</p>		<p>replace it with a new one.</p> <p>Select a CPU that meets specific requirements.</p> <p>Install a new CPU.</p>	<p>replacing the motherboard of a computer.</p> <p>Guide students to select a CPU which meets specific requirements.</p> <p>Assist students to replace the CPU of a computer system.</p>	
7	<p>2.8 List the steps to replace a computer mass storage.</p> <p>2.9 List the steps to replace a computer graphics card</p> <p>2.10 List the steps to replace a computer sound card.</p>	<p>Explain: How to choose a suitable mass storage which meets specific requirements.</p> <p>How to select a suitable graphics and sound card which meets specific requirements.</p>	<p>Multimedia lab. PC connected to an OHP. PowerPoint presentation of Lectures. Smart/White board</p>	<p>Select appropriate mass storage which matches specific requirements.</p> <p>Install a hard disk on a computer.</p> <p>Install a sound and graphic card.</p>	<p>Guide students to: Select appropriate Hard Disk for a computer.</p> <p>Replace a Hard Disk of a computer.</p> <p>Replace a graphic card.</p> <p>Replace a sound card.</p>	<p>Explain how to choose a suitable mass storage which meets specific requirements</p> <p>Explain how to replace the computer display Unit</p>
<b>General Objective:</b> 3.0 Understand how to use diagnostic software						
8	<p>3.1 Define Virus</p> <p>3.2 List examples of</p>	<p>Explain viruses and their types.</p> <p>Explain how to</p>	<p>Multimedia lab. PC connected to an OHP.</p>	<p>Recognize POST error message code as an</p>	<p><b>Guide students to :</b></p> <p>Recognize POST</p>	<p>Explain virus and virus protection</p>

	Viruses 3.3 Explain a Power-on Self Test (POST) error message.	recognize Power-on Self Test (POST) error message code.	PowerPoint presentation of Lectures. Smart/White board	indication of a virus protection utility problem.  Rectify the virus protection utility problem by reinsertion or replacement.  Install anti virus system and scan a computer.	error message code as an indication of a virus protection utility problem and remedy it.  Install Anti-virus software and perform a comprehensive scan.	utility .
	<b>General Objective:</b> 4.0 Understand how to perform basic maintenance of multimedia video equipment					
9	4.1 List the steps to take to protect multimedia video equipment from environmental factors.  4.2 Enumerate some basic steps in performing routine maintenance of HD cameras.	Explain how to protect multimedia video hardware from environmental factors like dust, water, moisture, etc.  Explain how to perform routine maintenance of HD cameras.	Multimedia lab. PC connected to an OHP. PowerPoint presentation of Lectures. Smart/White board	Take the measures for protecting video equipment from environmental factors like dust and moisture.	Show students the measures to take in order to protect video equipment from environmental factors.  Demonstrate how to perform routine maintenance on HD cameras.	
	<b>General Objective:</b> 5.0 Understand how to perform basic maintenance of multimedia audio equipment					
10.	5.1 List the steps to take to protect multimedia audio equipment from	Explain how to protect multimedia audio hardware from	Multimedia lab. PC connected to an OHP.	Take the measures for protecting audio equipment	Show students the measures to take in order to protect	

	environmental factors.  5.2 Enumerate some basic steps in performing routine maintenance of audio equipment.	environmental factors like dust, water, moisture, etc.  Explain how to perform routine maintenance of multimedia audio equipment.	PowerPoint presentation of Lectures. Smart/White board	from environmental factors like dust and moisture.	audio equipment from environmental factors.  Demonstrate how to perform routine maintenance on audio equipment..	
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### Assesment

Type of Assessment	Purpose and Nature of Assessment	Weighting (%)
Examination	Final Examination (written) to assess knowledge and understanding	40
Practical / Projects	To be assessed by the teacher	60
Total		100

### Recommended Books

- i. PC Upgrading & Maintenance No Experience Required: No Experience Necessary
- ii. PC Repair and Maintenance a Practical Guide
- iii. Upgrading and Repairing PCs
- iv. Absolute Beginners Guide to Upgrading and Fixing Your PC

<b>PROGRAMME:</b>	-	<b>National Diploma in Multimedia Technology</b>
SEMESTER:	-	2
COURSE TITLE:	-	INTRODUCTION TO ANIMATION
DURATION	-	Lecture 2hrs                  Practicals 2hrs
CREDIT UNIT:	-	4
CODE NO:	-	MMT 126
GOAL:	-	The course is designed to enable students create simple 2 Dimensional (2D) animation

**GENERAL OBJECTIVES:**

On completion of this module, the students should be able to:

1. Understand the meaning of animation
2. Describe the principles of animation
3. Know the process of creating 2D animation
4. Explain the use of principles and elements of design in animation
5. Create a simple 2D animation project

<b>PROGRAMME: NATIONAL DIPLOMA IN MULTIMEDIA TECHNOLOGY</b>						
<b>COURSE: INTRODUCTION TO ANIMATION</b>			<b>COURSE CODE: MMT 126</b>	<b>CONTACT HOURS: 4</b>		
<b>GOAL: The course is designed to enable students create simple 2D animation</b>						
<b>COURSE SPECIFICATION: THEORETICAL CONTENT</b>				<b>PRACTICAL CONTENT</b>		
<b>General Objectives: 1.0: Understand the meaning of animation</b>						
<b>Week</b>	<b>Specific Learning Outcomes</b>	<b>Teacher's Activities</b>	<b>Resources</b>	<b>Specific Learning Outcomes</b>	<b>Teacher's activities</b>	<b>Evaluation</b>
	1.1 Define animation 1.2 Give the historical development of animation 1.3 Describe the different types of animation (2D and 3D, traditional and computer generated animation) 1.4 Identify animation characters 1.5 Explain major software used in creating animation 1.6 Explain the applications of animation in a digital technology era 1.7 Give overview of the animation industry	Discuss the concept of animation  Explain different types of animation  Identify the applications of animation in a digital technology era	Multimedia lab, Pictures Textbooks Whiteboards Markers Cleaners PC computer Adobe flash Projector	Identify the elements of design	Show students the different types of animation  Demonstrate the applications of animation in a digital technology era	Explain processes of creating animation

<b>General Objective 2.0: Describe the principles of animation</b>						
2.1	Describe the principles of animation	Explain the principles of animation	Multimedia Room, Pictures			Discuss the principles of animation
2.2	Analyse the principles of animation		Textbooks Whiteboards Markers Cleaners PC computer Adobe flash Projector			
<b>General Objectives: 3.0 Know the processes involved in creating 2D animation</b>						
3.1	Describe characters and walk cycles in animation	Explain the structure of the walk cycle	Multimedia lab, Pictures	Demonstrate the various components of a storyboard	Assist students to create sketches of a storyboard	Discuss attributes of script, storyboard, voiceover and sound to animation
3.2	Explain the role of a background		Textbooks Whiteboards Markers			
3.3	Explain a storyline and storyboard	Explain how to Create a storyboard	Cleaners PC computer Adobe flash Projector		Assist students to test their storyboard sequence, animatics and voiceover narration	
3.4	Explain an animatic using storyboard images					
3.5	Explain the timing of the animation	Analyze synchronizing voice to animation				
3.6	Identify the voiceover and sound effect					
<b>General Objectives: 4.0 Explain the use of principles and elements of design in animation</b>						
4.1	Explain the use of the following	Discuss how the different principles	Multimedia lab, Pictures	Use the principles and elements of	Demonstrate to students how the	Explain the use of

	<p>elements and principles of design:</p> <p>(i) Elements:</p> <ul style="list-style-type: none"> <li>• Line</li> <li>• Shape</li> <li>• Texture</li> <li>• Space</li> <li>• Size</li> <li>• Value</li> <li>• Colour</li> </ul> <p>(ii) Principles:</p> <ul style="list-style-type: none"> <li>• Balance</li> <li>• Unity</li> <li>• Pattern</li> <li>• Variety</li> <li>• Emphasis</li> <li>• Contrast</li> <li>• Movement</li> <li>• Proportion</li> </ul> <p>4.2 Describe an animation production pipeline</p>	<p>and elements of design are used in animation</p>	<p>Textbooks Whiteboards Markers Cleaners PC computer Adobe flash Projector</p>	<p>design in creating animation</p>	<p>principles and elements of design are used in animation</p>	<p>colour in animation</p> <p>Explain the different types of balance as used in animation</p> <p>Discuss the production pipeline of animation production</p>
<p><b>General Objectives: 5.0 Create a simple 2D animation project</b></p>						
	<p>5.1 Explain how a simple animation story can be created using a 2D software</p>	<p>Describe a banner for web application</p>	<p>Multimedia lab, Pictures, Textbooks, Animation</p>	<p>Insert sound in animation</p>	<p>Demonstrate to students the process of inserting sound in animation</p>	<p>Explain character development in animation</p>

	5.2 Describe timeline for the production of a simple animation clip	Describe the steps for creating a simple animation project	software, Whiteboards Markers Cleaners Projector	Create a simple animation project	Guide students on how to create a simple animation project	Create a simple animation project
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### Recommended Books

- i. Essentials of Animation
- ii. Character Animation
- iii. Timing for Animation
- iv. Animation Development
- v. Sketching for Animation
- vi. Stop-motion Animation
- vii. Creating Characters in Animation
- viii. Animation: From Script to Screen
- ix. Creative Drawing
- x. How to Make Animation

PROGRAMME: NATIONAL DIPLOMA IN MULTIMEDIA TECHNOLOGY  
COURSE: VIDEO PRODUCTION  
CODE: MMT211  
PRE-REQUISITE: NONE  
SEMESTER: 3  
CREDIT UNIT: 3  
DURATION: 15 WEEKS  
GOALS: The course is designed to acquaint students with the basic knowledge and skills in video production.

## **General Objectives**

1. Understand basic video terminologies and technology
2. Explain the stages of video production-(3 Ps-Pre-Production, Production and Post-Production))
3. Understand basic Pre-production tools and techniques (From ideation to Scripting)
4. Undertake production tasks
5. Perform basic post-production tasks

<b>Programme:</b> National Diploma in Multimedia Technology		<b>Course Code:</b>	MMT211	<b>Contact Hours:</b> 4 hours /week		
<b>Course:</b> VIDEO PRODUCTION				<b>Theoretical:</b> 1 hours /week		
<b>Year:</b> 2	<b>Semester:</b> 1	<b>Pre-requisite:</b>	None	<b>Practical:</b> 2 hours /week		
<b>GOAL:</b> The Course is designed to acquaint students with basic knowledge and skills in video production.						
<b>COURSE SPECIFICATION:</b> Theoretical Contents				Practical Contents:		
6. <b>General Objectives:</b> 1.0 Understand basic video terminologies and technology						
WEEK	Specific Learning Objective	Teachers Activities	Learning Resources	Specific Learning Objectives	Teachers Activities	Evaluation
	1.1 Define Videography  1.2 Trace the development of Video production Technology  1.3 Define basic Video production terminologies ( cue, cut, roll, action, freeze, rap etc)	Explain Videography,  Trace the development of Video production Technology.  Explain basic terminologies	Digital Video Studio: White board. Multimedia PC with Projector. Video camera, microphones, internet connection	Demonstrate the practical application of video production terminologies	Assist students to see stages of video technology from analogue to digital  Illustrate different production terminologies.	Explain the different terminologies of video production and trace the evolution from analogue to digital.
WEEK	7. <b>GENERAL OBJECTIVE:</b> 2.0 Explain the stages of video production-(3 Ps-Pre-Production, Production and Post-Production)					
	2.1 Describe the overall production process (3Ps)  2.2 Identify the key personnel and roles involved at each stage of the production process	Provide an overview of 3Ps of production i.e .pre-production, production and post production  Explain the key	Digital Video Studio: White board. Multimedia PC with Projector. Video camera, microphones,			Explain the stages of video production ( 3Ps)

		personnel and their roles i.e Producer, Director, Camera Operator, script writer and Talents	internet connection			
WEEK	<b>GENERAL OBJECTIVE:</b> 3.0 Understand basic Pre-production tools and techniques (From ideation to Scripting)					
	3.1 Explain sources of ideas for video production.  3.2 Describe the process of script development	Describe with the aid of examples, sources of ideas for video production  Explain with the aid of examples the process of script development from ideas to finished script.	Multimedia Room	Practically generate ideas and write scripts.	Guide students to generate ideas and write scripts	Explain sources of ideas for video production and practically develop a video script.
	3.2 Create storyboards  3.4 Develop shooting scripts and schedules	Explain with the aid of examples the act of developing story boards.  Explain how to develop story boards.  Describe how to write shooting scripts and schedules	Multimedia Room	Practically developed story boards  Demonstrate how write shooting scripts and schedules	Assist students to practically develop story boards.  Demonstrate how write shooting scripts and schedules	Develop a story board and write shooting script.

WEEK	<b>GENERAL OBJECTIVE: 4.0</b> Undertake production tasks					
	4.1 Describe the features of a typical video camera	Describe the components/features of a typical digital camcorder	Multimedia Room	Demonstrate the practical application of the theoretical content	Assist students in using a digital camcorder	Video Lab
7	<p>4.2 Identify classifications of camera shots:</p> <p>i. Types of shots (ES, MLS,MCU, CU etc)</p> <p>ii. Angles of shots (HAS, LAS, WAS etc)</p> <p>4.3 Describe camera movement (Pan, Tilt, Crab, Dolly, Track, Crane)</p> <p>4.4 Explain types of microphones and basic technologies of recording audio</p> <p>4.5 Explain the role of lighting in video production</p>	<p>Explain the process of setting up and operating a camcorder including focusing; audio adjustments</p> <p>Describe different techniques for supporting a camera including hand held and tripod mounting</p>	Digital video recording studio	Setup and operate video camera, utilizing different techniques.	Assist students to setup and operate video camera, utilizing different techniques.	Setup video camera using different techniques
WEEK	<b>GENERAL OBJECTIVE: 5.0</b> Perform basic post-production tasks					
	5.1 Describe the PC hardware requirements to perform video editing	Describe typical hardware requirements, including processor, memory, disk space/type	Digital Editing Studio	Demonstrate transferring of digital video to a PC. Demonstrate the practical application of the	Guide students in transferring digital video to a PC.	Describe the hardware requirements to perform video editing
	5.2 Describe current hardware interfaces to					

	<p>support the transfer of digital video to PC's for storage/editing</p> <p>5.3 Import video clips into a simple None Linear Editor (NLE)</p> <p>5.4 Use a simple NLE tool to trim and combine video clips applying simple pre-defined transitions, filters and title effects</p> <p>5.5 Use a simple NLE tool to render and export video in a range of different formats</p>	<p>Discuss alternative digital interfaces such as USB and Fire wire</p> <p>Demonstrate the use of a simple NLE such as Windows Movie Maker</p> <p>Demonstrate rendering and exporting to different formats/devices.</p>		<p>theoretical content</p>	<p>Assist students in using a simple NLE tool to trim and combine video clips applying simple pre-defined transitions, filters and title effects</p>	<p>Import video clips into a simple None Linear Editor (NLE)</p>
	<p>5.6 Identify the hardware and software required to transfer analogue video to digital formats</p>	<p>Explain the importance of bandwidth</p> <p>Discuss the use of video capture cards and techniques for importing analogue video</p>	<p>Digital Editing Studio</p>	<p>Demonstrate the practical application of the theoretical content</p> <p>Demonstrate the practical application of the theoretical content</p>	<p>Assist students to render and export video in a range of different formats</p> <p>Assist students to import analogue video into a NLE</p>	<p>Explain the hardware and software required to transfer analogue video to digital formats</p>

### Assesment

Type of Assessment	Purpose and Nature of Assessment	Weighting (%)
Practical / Projects	To be assessed by the teacher	100
Total		100

## Recommended Books

- i. Video Production Handbook
- ii. The lean Explainer Video Production Handbook for Startups and Entrepreneurs
- iii. The Film Makers Handbook
- iv. In the Blink of an Eye, a Perspective on Film Editing 2<sup>nd</sup> edition
- v. Introduction to Video Production
- vi. Video Production Workshop
- vii. Television Production
- viii. Teaching the Video Production Class
- ix. Video Production Techniques: Theory and Practice from Concept to Screen
- x. Video Field Production and Editing

PROGRAMME: NATIONAL DIPLOMA IN MULTIMEDIA TECHNOLOGY  
COURSE: MULTIMEDIA AUTHORIZING I  
CODE: MMT212  
PRE-REQUISITE: MMT113  
SEMESTER: 3  
CREDIT UNIT: 3  
DURATION: 15 WEEKS  
GOALS: This course is designed to create awareness of multimedia applications using an appropriate authoring tool in students.

### **General Objectives**

1. Know the basic features provided by multimedia authoring tools
2. Create simple graphics and text within an authoring tool
3. Understand and apply the fundamental principles of two dimensional animation
4. Create simple two dimensional animations
5. Apply pre-defined transition and animation effects
6. Implement simple interactivity/navigation
7. Understand how to utilize pre-existing digital media assets within a multimedia application
8. Incorporate multimedia within stand-alone applications and websites

<b>Programme:</b> National Diploma in Multimedia Technology		<b>Course Code:</b>	MMT212	<b>Contact Hours:</b> 4 hours /week		
<b>Course:</b> MULTIMEDIA AUTHORIZING I				<b>Theoretical:</b> 1 hours /week		
<b>Year:</b> 2	<b>Semester:</b> 1	<b>Pre-requisite:</b>	MMT113	<b>Practical:</b> 2 hours /week		
<b>GOAL:</b> This course is designed to create awareness of multimedia applications using an appropriate authoring tool in students						
<b>COURSE SPECIFICATION:</b> Theoretical Contents				Practical Contents:		
<b>General Objectives:</b> 1.0 Perceive the basic features provided by multimedia authoring tools						
WEEK	Specific Learning Objective	Teachers Activities	Learning Resources	Specific Learning Objectives	Teachers Activities	Evaluation
	1.1 List the features of multimedia 1.2 Define authoring tool 1.3 Describe different styles of authoring tools 1.4 Identify multimedia architectures i.e. proprietary and open source architectures	Discuss the features of Multimedia  Explain the characteristics and different styles of authoring tool  Classify multimedia architecture	Multimedia Room:  White board.  Multimedia PC with Projector.  Presentation slides  Network/Internet Connection			Define authoring tool and state the different styles of authoring tools
<b>WEEK</b>	<b>GENERAL OBJECTIVE:</b> 2.0 Create simple graphics and text within and authoring tool					
3	2.1 Explain the use of drawing and text tools 2.2 Describe vector and bitmap effects	Discuss the uses of drawing and text tools  Analyze vectors and bitmap effects (fills,	Multimedia lab:  White board.  Multimedia PC with Projector.	Illustrate basic drawing tools, vectors and bitmap effects	Show the basic drawing tools with the software (macromedia/Adobe flash)	Explain the use of drawing and text tools

		2D, 3D transformation)	Macromedia/Adobe Flash.  Network/Internet Connection			
<b>WEEK</b>	<b>GENERAL OBJECTIVE: 3.0</b> Understand and apply the fundamental principles of two dimensional (2D) animation					
	3.1 Describe the basic principles of 2D animation 3.2 List with examples of basic 2D animation  3.3 Describe Key frame/timeline in 2D animation application  3.4 Define automatic tweening 3.5 Explain easing to create natural motion	Provide examples of basic 2D animation principles  Describe the traditional key frame animation  Explain the principles of tweening the use of automatic tweening	Multimedia lab:  White board.  Multimedia PC with Projector.  Macromedia/Adobe Flash.  Network/Internet Connection	Demonstrate the functions of the key frame, timeline, automatic tweening and natural motion	Show the functions of the key frame, timeline, automatic tweening and natural motion	Discuss the main fundamental principles 2D animation
<b>WEEK</b>	<b>GENERAL OBJECTIVE: 4.0</b> Use masks and animation paths					
6	4.1 Define use Masking 4.1 Explain the concept of masking and animation paths using text	Explain the concept of masking and animation paths using text	Multimedia lab:  White board.  Multimedia PC with Projector.  Macromedia/Adobe Flash.  Network/Internet Connection	Create an animation path using text	Show how to create an animation path using text	Discuss the concept use masks and animation paths

<b>WEEK</b>	<b>GENERAL OBJECTIVE: 5.0</b> Apply pre-defined transitions and animation effects					
7	5.1 Explain pre-defined transitions and animations 5.2 Describe animation effects	Classify typical transition and animation effects	Multimedia lab:  White board.  Multimedia PC with Projector.  Macromedia/Adobe Flash.  Network/Internet Connection	Experiment on how to develop a pre-defined transition	Develop pre-defined transition	Explain pre-defined transitions and animations
<b>WEEK</b>	<b>GENERAL OBJECTIVE: 6.0</b> Implement simple interactivity and navigation					
8	6.1 Describe interactivity and navigation 6.2 Explain pre-defined scripts 6.3 Define custom scripts	Provide an overview of how predefined scripts can be used to implement interactivity	Multimedia lab:  White board.  Multimedia PC with Projector.  Macromedia/Adobe Flash.  Network/Internet Connection	Utilize the pre-defined scripts to create navigations	Show how to use pre-defined scripts to create navigation buttons and links	Explain interactivity and navigation
<b>WEEK</b>	<b>GENERAL OBJECTIVE: 7.0</b> Utilize pre- existing digital media assets within a multimedia application					
9	7.1 Use images in authoring environment	Describe how to import, edit and publish images using the authoring	Multimedia lab:  White board.	Create an animation with images in the authoring environment	Demonstrate and guide students on how to create an animation	Discuss the concept of digital media in

		environment	Multimedia PC with Projector.  Macromedia/Adobe Flash.  Network/Internet Connection		containing images	multimedia
10	7.2 Use audio in authoring environment	Describe how to import audio using the authoring environment	Multimedia lab:  White board.  Multimedia PC with Projector.  Macromedia/Adobe Flash.  Network/Internet Connection	Create an animation with audio in the authoring environment	Demonstrate and guide students on how to create an animation containing audio	
11	7.3 Use video in authoring environment	Describe how to import audio using the authoring environment	Multimedia lab:  White board.  Multimedia PC with Projector.  Macromedia/Adobe Flash.  Network/Internet	Create an animation with video in the authoring environment	Demonstrate and guide students on how to create an animation containing audio	

			Connection			
<b>WEEK</b>	<b>GENERAL OBJECTIVE: 8.0</b> Incorporate multimedia within stand-alone applications and websites					
12	8.1 Create stand-alone applications 8.2 Incorporate multimedia objects within webs pages	Explain the process of publishing stand-alone applications and demonstrate how to incorporate multimedia within web pages	Multimedia room: White board. Multimedia PC with Projector. Presentation slides. Network/Internet Connection	Produce a stand-alone 2D application	Demonstrate the stages of coupling a stand-alone multimedia application	Differentiate between stand-alone application and websites

### Assesment

Type of Assessment	Purpose and Nature of Assessment	Weighting (%)
Examination	Final Examination (written) to assess knowledge and understanding	40
Practical / Projects	To be assessed by the teacher	60
Total		100

PROGRAMME: NATIONAL DIPLOMA IN MULTIMEDIA TECHNOLOGY  
COURSE: WEB DESIGN  
CODE: MMT213  
PREREQUISITES: COM 122  
SEMESTER: 3  
CREDIT UNIT: 4  
DURATION: 15 WEEKS  
GOALS: This course is designed to enable students create and manage static websites.

### **General Objectives**

1. Understand the basic web concepts
2. Appreciate the features supported by a typical authoring package
3. Create simple webpages and define links within pages
4. Control presentation and layout using style sheets
5. Use tables to display tabular data
6. Incorporate graphics and Time-based media within web pages
7. Publish and manage websites

<b>Programme:</b> National Diploma in Multimedia Technology			<b>Course Code:</b>	MMT213	<b>Contact Hours:</b> 4 hours /week	
<b>Course:</b> Web Design					<b>Theoretical:</b> 1 hours /week	
<b>Year:</b> 2 <b>Semester:</b> 1			<b>Pre-requisite:</b>	COM122	<b>Practical:</b> 3 hours /week	
<b>GOAL:</b> This course is designed to enable students create and manage static websites.						
<b>COURSE SPECIFICATION:</b> Theoretical objective(s)				Practical Contents:		
<b>General Objectives:</b> 1.0 Understand basic web concepts						
WEEK	Specific Learning Objective	Teachers Activities	Learning Resources	Specific Learning Objectives	Teachers Activities	Evaluation
1	1.1 Define websites 1.2 Trace the historical background 1.3 List the different types of websites 1.4 Differentiate types of website (Commercial, Education, Information, Government etc.)	Explain websites and trace the historical background.  Compare different types of websites	Multimedia lab: White board. Multimedia PC with Projector. Necessary software. Presentation slides			Define a website  List the different types of websites
2	1.5 Explain the terms Web page, Web Server, Browser and URL 1.6 Define HTTP, HTTPS, Markup, Content, Content Type etc.	Discuss the terms Web page, Web Server, Browser and URL Explain HTTP, HTTPS, Markup, Content, Content Type	Multimedia lab: White board. Multimedia PC with Projector. Necessary software. Presentation slides	Identify the basic web concepts, HTTP, Markup, Content, Content Type	Show Website, Webpage, Web Server, Browser and URL	State the differences between Website and Web page

WEEK	<b>GENERAL OBJECTIVE: 2.0</b> Appreciate the features supported by a typical authoring package					
	2.1 Explain template based web sites 2.2 Exemplify webpages in preview, design, code mode	Explain template based websites, webpages in preview, design and code mode	Multimedia lab: White board. Multimedia PC with Projector. Necessary software. Presentation slides	Create a basic template-based website	Show the students some template based websites and demonstrate how to create a simple template	Discuss template based websites
WEEK	<b>GENERAL OBJECTIVE: 3.0</b> Create simple webpages and define links within pages					
	3.1 Explain page titles 3.2 Explain texts within a page 3.3 Explain images within a page 3.4 Explain links in a webpage i.e. Navigation links, email links etc.	Explain page titles, texts and images within a webpage	Multimedia lab: White board. Multimedia PC with Projector. Necessary software. Presentation slides	Demonstrate how to insert page titles, texts and images in a webpage	Show how to Create a simple webpage, insert page titles, texts and images	Define webpage  Explain page tiles, texts and images within a webpage.
WEEK	<b>GENERAL OBJECTIVE: 4.0</b> Control presentation and layout using cascading style sheets (CSS)					
	4.1 Explain CSS (Cascading Style Sheets) 4.2 Describe style sheet selectors 4.3 Define control typography 4.4 Describe control layout and positioning	Explain the concept of CSS in web design.	Multimedia lab: White board. Multimedia PC with Projector. Necessary software. Presentation slides	Design through website with CSS code	Show the process of designing website with CSS codes	Discuss CSS in web design

WEEK	<b>GENERAL OBJECTIVE: 5.0</b> Use tables to display tabular data					
	5.1 Describe the concept of tables in web design 5.2 Identify merging rows and columns in tables 5.3 Identify presentation of rows, columns cells and content	Explain the use of tables to display tabular data. Explain why tables should not be used for layout	Multimedia lab: White board. Multimedia PC with Projector. Necessary software. Presentation slides	Insert table(s) on a webpage	Illustrate how to design a table in a webpage. Show how to merge rows and columns	Describe how tables are inserted in a webpage
WEEK	<b>GENERAL OBJECTIVE: 6.0</b> Incorporate graphics and Time-based media within webpages					
	6.1 Explain image optimization for the web 6.2 Enumerate Inclusion of images within pages 6.3 Define Image maps	Explain optimization.  Explain inclusion of images within pages and image maps	Multimedia lab: White board. Multimedia PC with Projector. Necessary software. Presentation slides	Demonstrate how to incorporating graphics into webpages.	Show how to incorporate graphics into webpages.	Define image optimization
	6.4 Compare alternative formats and technologies for delivering animation in a webpage 6.5 Describe alternative formats and technologies for delivering video in a webpage 6.6 Describe alternative audio formats and technologies for delivering audio in a webpage	Discuss alternative formats and technologies for delivering animation, video and audio in a webpage	Multimedia lab: White board. Multimedia PC with Projector. Necessary software. Presentation slides	Embed video and audio within a web page  Select appropriate formats  Create a simple animation and embed it within a web page	Exhibit the process of embedding video and audio into a webpage  Show the appropriate audio formats and Incorporate it within a web page	What are the alternative formats for delivery of animation, audio and video

WEEK	GENERAL OBJECTIVE: 7.0 Publish and manage web sites					
11	10.1 Discuss viewing and managing web sites 10.2 Selectively publish/update websites	Explain the process of publishing website and the features supported by a typical authoring package	Multimedia room: White board. Multimedia PC with Projector. Necessary software. Presentation slides			What is the process of publishing a website?

### Assesment

Type of Assessment	Purpose and Nature of Assessment	Weighting (%)
Examination	Final Examination (written) to assess knowledge and understanding	40
Practical / Projects	To be assessed by the teacher	60
Total		100

### Recommended Books

- i. Learning We Design A beginner and Guide to HTML, CSS, Java script and web graphics
- ii. Communication design Developing website documentation for design and planning
- iii. Foundations of web design: Introduction to HTML and CSS
- iv. In introduction to web design –The essential guide to HTMLS and CSS
- v. An introduction to web development and programming
- vi. Author ware: An introduction to Multimedia
- vii. Multimedia Authoring: Building and Developing Documents

PROGRAMME: NATIONAL DIPLOMA IN MULTIMEDIA TECHNOLOGY  
COURSE: SOUND PRODUCTION  
CODE: MMT214  
SEMESTER: 3  
CREDIT UNIT: 3  
DURATION: 15 WEEKS  
GOAL: The course is designed to enable students understand basic principles of sound production.

## **General Objectives**

1. Understand the basic characteristics of sound
2. Know the principles of digital sound representation
3. Describe sound production process
4. Appreciate the core components of a digital recording studio
5. Configure a typical Digital Audio Workstation (DAW)
6. Undertake basic sound production tasks
7. Recognize the relevant legal requirements

<b>Programme:</b> National Diploma in Multimedia Technology		<b>Course Code:</b>	MMT214	<b>Contact Hours:</b> 4 hours /week		
<b>Course:</b> SOUND PRODUCTION				<b>Theoretical:</b> 1 hours /week		
<b>Year:</b> 2	<b>Semester:</b> 1	<b>Pre-requisite:</b>	ICT101	<b>Practical:</b> 2 hours /week		
<b>GOAL:</b> The course is designed to enable students understand basic principles of sound production.						
<b>COURSE SPECIFICATION:</b> Theoretical Contents				Practical Contents:		
<b>General Objectives:</b> 1.0 Understand the basic characteristics of sound						
WEEK	Specific Learning Objective	Teachers Activities	Learning Resources	Specific Learning Objectives	Teachers Activities	Evaluation
1	1.1 Define sound, noise and music. 1.2 Identify sources of sound 1.3 Describe how sound is transmitted and perceived 1.4 Explain the significance of frequency, amplitude, harmonics and envelope	Differentiate between sound, noise and music.  Explain sources of sound  Explain how sound is transmitted and perceived.  Explain, with the aid of examples, the significance of frequency, amplitude, harmonics and envelope	Digital Sound Studio: White board. Digital Audio Workstation with Projector. Necessary software. Network/Internet Connection Microphone(s) Midi Keyboard	Use a synthesiser/softsynthesers to explore sounds	Assist students in using a synthesiser/softsynthesers to explore sounds	Differentiate between sound, noise and music   Discuss the significance of frequency, amplitude, harmonics and envelope
WEEK	<b>General Objectives:</b> 2.0 Explain the principles of digital sound representation					
2	2.1 Appreciate how sound	Explain the	Digital Audio	Select digital sound file	Demonstrate to students	Discuss

	is represented digitally 2.2 Describe and select appropriate digital sound file formats	significance of sampling rate / resolution, Nyquist theorem. Oversampling, quantization and channels. Provide an overview of common file formats and CODECS	Studio. whiteboard, textbooks, internet resources	formats	how to select digital sound file formats	how to select digital sound file formats  Explain how sound is represented digitally
<b>WEEK</b>	<b>General Objectives:</b> 3.0 Describe sound production process					
3	3.1 Explain sound production  3.2 Explain the sound production pipeline  3.3 Identify key roles and responsibilities within the production team	Describe the stages of sound production and identify key roles and responsibilities within the production team	Multimedia Room			Elucidate on sound production pipeline  What are the key roles and responsibilities within the production team
<b>WEEK</b>	<b>General Objectives:</b> 4.0 Identify the core components of a digital recording studio					
4	4.1 Identify the core components of digital recording studio  4.2 Summarise the	Explain the core components of a digital recording studio	Multimedia Room and Digital Recording Studio	Identify the core components of a digital recording studio	Show students the core components of a digital recording studio	Enumerate the core components of digital recording

	physical and software components found within a digital recording studio	Describe the physical and software components found within a digital recording studio				studio.
<b>WEEK</b>	<b>General Objectives:</b> 5.0 Configure a typical Digital Audio Workstation (DAW)					
	<p>5.1 Identify basic hardware requirements of a DAW</p> <p>5.2 Specify and use sound capture cards and devices</p> <p>5.3 Configure and connect studio components</p> <p>5.4 Explain the role of midi, and sequencers</p>	<p>Describe the basic hardware requirements of a DAW</p> <p>Explain the use of sound capture cards and devices</p> <p>Identify common analog and digital interfaces and connectors</p> <p>Provide an overview of Midi technology; its use and significance</p>	<p>Multimedia Room, Multimedia lab, Digital audio work station</p> <p>Multimedia Room</p>	<p>Configure a typical Digital Audio Workstation</p>	<p>Demonstrate how to configure a typical Digital Audio Workstation</p>	<p>Explain how to configure a typical Digital Audio Workstation</p>
<b>WEEK</b>	<b>General Objectives:</b> 6.0 Undertake basic sound production tasks					
	<p>6.1 Explain typical digital sound recording devices</p>	<p>Describe common digital sound recording devices and formats such as DAT Minidisc, hard disk.</p>	<p>Multimedia Room</p> <p>Example recorders: DAT Minidisc, hard disk</p>	<p>Demonstrate the practical application of the theoretical content</p>	<p>Assist students to operate common digital sound recording devices</p>	<p>Describe common digital sound recording devices and</p>

						formats
	6.2 Identify appropriate types of microphone for specific sound production  6.3 identify best microphone placement for specific sound effect.	Describe different types of microphones and provide guidelines on their use. Provide guidelines on microphone placement	Multimedia Room	Select the best microphone placement for specific sound effect.	Assist students in selecting the best microphone placement for specific sound effect.	State how to select the best microphone placement for specific sound effect.
	6.4 Describe the features of typical digital audio editor software	Explain the features of an audio editor	Digital Sound Recording Studio			Explain the features of an audio editor
	6.5 Explain how to manage multiple tracks and apply common edit operations into a mono track	Outline the creation of multiple tracks and the application of typical edit operations such as gain changes, normalization and cross fade	Digital Sound Recording Studio	Create and manage multiple tracks	Assist students to create and manage multiple tracks	Explain how to manage multiple tracks and apply common edit operations into a mono track
	6.6 Identify the general principles of sound mixing and uses of common signal processors	Explain the general principles of mixing and explain the use of common signal processors such as equalizers and dynamic range processors	Digital Sound Recording Studio	Demonstrate sound mixing	Assist students on sound mixing	Explain the general principles of mixing and explain the use of common signal processors

	6.7 List common time based effects	Explain common time based effects and	Multimedia Room	demonstrate the uses of common time based effects	Assist student in using common time based effects	Explain common time based effects
	6.8 Describe the process of Mastering for Multimedia and the Web	Explain the role and process of mastering.	Multimedia Room	Creating a master suitable for distribution on the web	Assist students in creating a master suitable for distribution on the web	Explain the process of Mastering for Multimedia and the Web
<b>WEEK</b>	<b>General Objectives:</b> 7.0 Describe relevant legal requirements					
	7.1 Describe legal requirements such as breach of copyright, intellectual property, digital rights management in sound production	Explain legal requirements such as breach of copyright, intellectual property, digital rights management in sound production	Multimedia Room			Explain copyright and digital rights management in relation to sound production

### Assesment

Type of Assessment	Purpose and Nature of Assessment	Weighting (%)
Examination	Final Examination (written) to assess knowledge and understanding	40
Practical / Projects	To be assessed by the teacher	60
Total		100

<b>PROGRAMME:</b>	-	<b>National Diploma in Multimedia Technology</b>
SEMESTER:	-	Second
COURSE TITLE:	-	DIGITAL IMAGING
PRE-REQUISITE	-	MMT 113
DURATION	-	Lecture: 1 hr Practical: 1 hr
CREDIT UNIT:	-	3
CODE NO:	-	MMT 215
GOAL:	-	This course is designed to acquaint students with the basic principles of digital imaging in photography.

#### GENERAL OBJECTIVES:

On completion of this course, the student should be able to:

1. Understand the basic principles of digital photography
2. Know the elements of digital photography
3. Understand the concepts and characteristics of digital image
4. Know the basic digital photography workflow
5. Understand the concept of Digital darkroom.
6. Understand the photoshop environment
7. Know how to import images into the photoshop application
8. Know how to crop, do colour correction and adjustments

9. Know how to use tools in photoshop.

<b>PROGRAMME: NATIONAL DIPLOMA IN PHOTOGRAPHY</b>						
<b>COURSE: INTRODUCTION TO DIGITAL PHOTOGRAPHY</b>			<b>COURSE CODE: MMT 215</b>		<b>CONTACT HOURS: 3</b>	
<b>GOAL: This course is designed to acquaint the students with the basic principles of digital imaging photography.</b>						
<b>COURSE SPECIFICATION: THEORETICAL CONTENT</b>				<b>PRACTICAL CONTENT</b>		
<b>General Objective: 1.0 Understand the basic principle of digital photography</b>						
<b>Week</b>	<b>Specific Learning Outcomes</b>	<b>Teacher's Activities</b>	<b>Resources</b>	<b>Specific Learning Objective</b>	<b>Teacher's activities</b>	<b>Resources</b>
	1.1 Define digital photography  1.2 Compare and contrast digital and analogue photography  1.3 Explain how images are capture in digital photography	Explain digital photography.  Discuss differences and similarities between digital and analogue photography  Describe how digital photographic images are created.	Chalk Board, Marker Board  Books, Journals Chemical chart			
<b>General Objective: 2.0 Know the elements of digital photography</b>						
	2.1 Discuss the following terms - Digital image - Digital sensors (CCD, CMOS) and pixels	Define the terms in 2.1	Whiteboard Markers Books Journals			

<b>General Objectives: 3.0 Understanding the concepts and Characteristics of Digital image</b>						
3.1 Define digital image	Explain the term on 3.1	Whiteboard Marker Books Journals				
3.2 List the following features of a digital image a. Resolution b. Colour depth c. File formats d. File size	Discuss various terms listed in 3.2					
3.3 Explain each features listed in the 3.2 above	Explain differences of each listed features when digital image is created for the monitor, web, printing and storage.					
3.4 Discuss the differences in each items listed in 3.4 for monitor and web display, and printer output.						
<b>General Objectives: 4.0 Know the basic digital photography workflow.</b>						
4.1 Explain the meaning of digital photography Workflow	Discuss each step listed in 4.1	Digital Cameras Scanners Computers	Identify the various hardware and software used in each stage of the workflow	Illustrate the workflow as listed	Digital Cameras Scanners Computers	
4.2 Identify the following stages of digital photography workflow • Capturing	Explain how to capture images, process and store them. Explain the method of	(with appropriate image editors) Printers	Practicalise each stage of the workflow	Display the various hardware and software required in each	(with appropriate photo editing	

	<ul style="list-style-type: none"> <li>• Transfer</li> <li>• Image processing</li> <li>• Outputting/Distribution/storing/sharing</li> </ul> <p>4.3 Explain each stage listed in 4.2</p>	outputting; storing and sharing.	Internet facility DVD/memory card etc.		stage  Demonstrate the correct application of various hardware and software used in each of the workflow.	software e.g photoscape, photoshop etc) Printers Internet facility DVD/memory cards etc.
<b>General Objectives: 5.0 Understanding the concept of image processing and manipulation in digital photography</b>						
	<p>5.1 Explain what is meant by digital darkroom</p> <p>5.2 Describe the setup and workspace of a typical digital darkroom</p> <p>5.3 Explain digital darkroom operations and activities</p> <p>5.4 Describe hardware specifications suitable for digital darkroom operations.</p>	<p>Define the term digital darkroom</p> <p>Discuss a typical layout of a digital darkroom</p> <p>Discuss various operations and activities common in a digital darkroom.</p> <p>List and relate the following items to digital darkroom operations: Computer platforms (Macs and Windows OS)</p>	<p>Digital darkroom Scanner Computers (with appropriate image editors) Printers Internet facility DVD/memory cards etc.</p>			

	<p>5.5 Identify software for digital darkroom operations eg. Photoshop; Photo Editor; Photo Editor; PhotoKit etc.</p> <p>5.6 Explain term digital Image/post processing.</p>	<p>Explain the performance for digital image processing system</p> <p>Monitor resolution for a digital darkroom system</p> <p>Image editing software.</p>	Image editing software.			
<b>General Objectives: 6.0</b> Understand the photoshop environment						
<b>Week</b>	<b>Specific Learning Outcomes</b>	<b>Teacher's Activities</b>	<b>Resources</b>	<b>Specific Learning Objective</b>	<b>Teacher's activities</b>	<b>Resources</b>
	<p>6.1 Explain photoshop as an image editing software</p> <p>6.2 Explain the use of Photoshop in digital images</p> <p>6.3 Open the Photoshop software</p> <p>6.4 Explain the Menu bar, File, Edit, Image etc.</p>	<p>Discuss the development of Photoshop</p> <p>Discuss the uses of Photoshop in image manipulation</p> <p>Discuss various ways of importing images to Photoshop</p> <p>Explain the various ways of opening</p>	<p>Textbooks, Journals, Computer system, Internet, Projector, Printer, Scanner, Memory card reader, DVD, Flash drive</p>	<p>Demonstrate how to open Photoshop.</p> <p>Import images into</p>	<p>Demonstrate how to open the Photoshop workspace</p>	<p>Computer system, Internet, Projector, Printer, Scanner, Memory card reader, DVD, Flash drive</p>

	6.5 Explain the process of importing images from a device into Photoshop	Photoshop		Photoshop is opened	Demonstrate how to import images into the Photoshop workspace.	
	6.6 Explain Photoshop workspace environment	Discuss Photoshop workspace.				
<b>General Objectives: 7.0</b> Know how to import images into the Photoshop application						
	7.1 Explain how to import images unto the Photoshop application	Discuss how to import images into photoshop application.	Camera, Scanner , memory card	Transfer images from devices (camera scanner etc) into the photoshop application.	Demonstrate how to upload images unto the photoshop application.	
	7.2 Identify shortcut keys	Explain the use of shortcut keys	Computer system, Internet, Projector,	Apply the palettes to manipulate images	the use of palette to manipulate images.	
	7.3 Define history Palette:	Describe the use of history palette	Printer, Scanner, Memory card reader, DVD, Flash drive			
	7.4 List basic shortcuts keys like - Open - Undo - Save - Closing a single images - etc	Explain the shortcut keys				
<b>8.0 Know how to crop, do colour correction and adjustments</b>						
	8.1 Explain what is	Discuss why it is	Computer	Crop imported	Demonstrate how	

	meant by cropping	necessary to crop an image	system, camera, scanner, printer	images in Photoshop application.	to crop an image imported in photoshop.	
	8.2					

Assessment: Course work 40%,

Examination 60%

PROGRAMME: NATIONAL DIPLOMA IN MULTIMEDIA TECHNOLOGY  
COURSE: MULTIMEDIA PROJECTS MANAGEMENT  
CODE: MMT221  
PRE-REQUISITES: NONE  
SEMESTER: 4  
CREDIT UNIT: 3  
DURATION: 15 WEEKS  
GOALS: The course is designed to enable students manage the development of multimedia applications/production.

## **General Objectives**

1. Understand core project management concepts
2. Use a project management tool to undertake basic project management tasks
3. Understand the basic principles of team management
4. Describe the key skills/roles required to design and develop multimedia applications/productions
5. Describe typical tasks and deliverables of the Discovery phase
6. Identify typical tasks and deliverables of the Design phase
7. Identify typical tasks and deliverables of the Production phase.

<b>Programme:</b> National Diploma in Multimedia Technology			<b>Course Code:</b>	MMT221	<b>Contact Hours:</b> 3 hours /week	
<b>Course:</b> Managing Multimedia Projects					<b>Theoretical:</b> 2 hours /week	
<b>Year:</b> 2	<b>Semester:</b> 2		<b>Pre-requisite:</b>	None	<b>Practical:</b> 1 hours /week	
<b>GOAL:</b> The course is designed to enable students manage the development of multimedia applications/production.						
<b>COURSE SPECIFICATION:</b> Theoretical Contents				Practical Contents:		
<b>General Objectives:</b> 1.0 Understand core project management concepts						
WEEK	Specific Learning Objective	Teachers Activities	Learning Resources	Specific Learning Objectives	Teachers Activities	Evaluation
	1.1 Define Multimedia project management  1.2 Appreciate the roles of Multimedia project in management  1.3 Describe the Multimedia project lifecycle	Explain the term project management  Describe the roles of project management with suitable examples  Describe the Multimedia project lifecycle	Lecture Room: White board. Library books and journals, Internet resources			What is Project Management?  Identify the roles of Project Management  Describe the Multimedia project lifecycle
	1.3 Explain the meaning and relevance of: Resource, Task, Milestone, Risk, Critical Path	Explain the meaning and relevance of: Resource, Task, Milestone, Risk, Critical Path.	Lecture Room: White board Library books and journals, Internet resources			Explain the meaning and relevance of: Resource, Task, Milestone, Risk and Critical Path.
WEEK	<b>GENERAL OBJECTIVE:</b> 2.0 Use a project management tool to undertake basic project management tasks					
	2.1 Create, Edit and Delete project plans 2.2 Add, remove and edit resources	Explain the basic operation of a typical project management tool	Lecture Room: White board. Library books and journals, Internet	create a simple project plan using the project	Demonstrate how to create	Explain how to Create, Edit and Delete project plans

	2.3 Add remove and edit tasks 2.4 Perform critical path analysis		resources, PCs, projector, necessary software	management tool	a simple project plan using the project management tool  Illustrate how to Create, Edit and Delete project plans	Describe how to perform critical path analysis Elucidate how to create a simple project plan using the project management tool
<b>WEEK</b>	<b>GENERAL OBJECTIVE:</b> 3.0 Understand the basic principles of team management					
	3.1 Describe successful team cultures 3.2 Identify different management styles 3.3 Explain the role of the project manager in relation to their team and senior management	Identify successful team culture Explain different management styles Identify the various roles of the project manager Using a case study, illustrate the basic principles of team management	Lecture Room: White board. Library books and journals, Internet resources,			Highlight the basic principles of team management  Discuss the various management styles you know. State the roles of a project manager in relation to their team and senior
<b>WEEK</b>	<b>GENERAL OBJECTIVE:</b> 4.0 Describe the key skills/roles required to manage the development of multimedia applications/productions					
	4.1 Characterize the roles and key skills required of:	Explain the key skills/roles required to	Lecture Room: White board.			State the roles and skills required of a project

	i. Project Manager ii. Director iii. Writer	manage the development of multimedia applications/productions	Library books and journals, Internet resources,			manager.  Highlight the key skills/roles required to manage the development of multimedia applications/productions
WEEK	<b>GENERAL OBJECTIVE: 5.0</b> Describe typical tasks and deliverables of the Discovery design and production phase					
	5.1 Describe the objective tasks and deliverables of the discovery phase	Describe the objective tasks and deliverables of the discovery phase, providing practical examples of each	Lecture Room: White board. Library books and journals, Internet resources, Lecture Room: White board. Library books and journals, Internet resources, PCs,			Describe the objective tasks and deliverables of the discovery phase
	5.2 Analyse product document requirements	Explain product document requirements.	Internet connectivity, projector	create a simple product requirements document	Assist students to create a product document requirements	Explain how to analyse and document product requirements  Describe how to create a simple product requirements document

	5.3 Analyse the content of a final proposal	Explain the content of the final proposal	Lecture Room: White board. Library books and journals, Internet resources, PCs, Internet connectivity, projector	Develop a simple product final proposal document	Illustrate how to develop a simple product final proposal document	Explain the content of the final proposal  What are the roles of the final proposal?
<b>WEEK</b>	<b>GENERAL OBJECTIVE: 6.0</b> Identify typical tasks and deliverables of the Design phase					
	6.1 Identify the objective tasks and deliverables of the Design Phase	Using a case study, explain the objective tasks and deliverables of the Design Phase	Lecture Room: White board. Library books and journals, Internet resources			Explain the objective tasks and deliverables of the Design Phase
	6.2 Describe the role and scope of functional and design specifications	Explain the role and scope of functional and design specifications providing illustrative examples of each	Lecture Room: White board. Library books and journals, Internet resources, PCs, Internet connectivity, projector	Create outline design and functional specifications	Illustrate how to create outline design and functional specifications	Highlight the role and scope of functional and design specifications  Describe how to create outline design and functional specifications
	6.3 Narrate detailed plans and budgets	Explain the role and scope of plans and budgets providing illustrative examples of each. Explain how a project planning tool and spreadsheet can be used	Lecture Room: White board. Library books and journals, Internet resources, PCs, Internet connectivity, projector	Create an outline plan and budget	Demonstrate how to create an outline plan and budget	State the role and scope of plans and budgets  Explain how to create an outline plan and budget

		to plan budgets				
WEEK	<b>GENERAL OBJECTIVE: 7.0</b> Identify, typical tasks and deliverables of the Production phase					
	7.1 List the objective tasks and deliverables of the Production Phase	Provide an overview of the objective tasks and deliverables of the Production Phase	Lecture Room: White board. Library books and journals, Internet resources			Highlight the objective tasks and deliverables of the Production Phase
	7.2 Explain task assignments and progress tracking.	Explain with the aid of the project planning tool how tasks can be assigned and tracked	Lecture Room: White board. Library books and journals, Internet resources, PCs, Internet connectivity, projector	Use the project planning tool to assign and track task progress	Demonstrate how to use the project planning tool to assign and track task progress	Explain how project planning tool can be used to assign and track task progress
	7.3 Describe the importance of change management and choose appropriate change management techniques	Explain why change management is important, the types of changes that may occur and techniques for managing them	Lecture Room: White board. Library books and journals, Internet resources, PCs, Internet connectivity, projector	Choose appropriate change management techniques	Illustrate how to choose appropriate change management technique	State the importance of change management  Elaborate the steps for choosing an appropriate change management technique
	7.4 List the qualities of assurance mechanisms	Explain the basic principles of quality management and identify general quality management strategies	Lecture Room: White board. Library books and journals, Internet resources			Explain the basic principles of quality management and its strategies

**Assesment**

Type of Assessment	Purpose and Nature of Assessment	Weighting (%)
Examination	Final Examination (written) to assess knowledge and understanding	40
Practical / Projects	To be assessed by the teacher	60
Total		100

DIPLOMA IN MULTIMEDIA TECHNOLOGY

COURSE: MULTIMEDIA AUTHORIZING II

CODE: MMT222

PRE-REQUISITE: MMT212

SEMESTER: 4

CREDIT UNIT: 4

DURATION: 15 WEEKS

GOALS: The course is designed to enable students create advanced multimedia applications using an appropriate authoring tool such as Adobe Flash and HTML5.

**General Objectives**

1. Understand the scripting language supported by the authoring tools
2. Know how to Apply scripts to create animation
3. Implement interactivity through the creation of custom scripts
4. Know how to dynamically load and control multiple locally stored assets
5. Know how to save and retrieve user generated data locally
6. Understand XML and its utilization
7. Know how to Save and retrieve remote data.

<b>Programme:</b> National Diploma in Multimedia Technology		<b>Course Code:</b>	MMT222	<b>Contact Hours:</b> 4 hours /week		
<b>Course:</b> MULTIMEDIA AUTHORIZING II				<b>Theoretical:</b> 1 hours /week		
<b>Year:</b> 2	<b>Semester:</b> 2	<b>Pre-requisite:</b>	MMT212	<b>Practical:</b> 3 hours /week		
<b>GOAL:</b> The course is designed to enable students create advanced multimedia applications using an appropriate authoring tool such as Adobe Flash and HTML5						
<b>COURSE SPECIFICATION:</b> Theoretical Contents			Practical Contents:			
<b>General Objectives:</b> 1.0 Understand the scripting language supported by the authoring tool						
WEEK	Specific Learning Objective	Teachers Activities	Learning Resources	Specific Learning Objectives	Teachers Activities	Evaluation
	1.2 Define the authoring tools event model 1.3 Explain scripting language supported by the authoring tool 1.4 State the use of basic constructs of the scripting language 1.5 Explain the key data types/object classes provided by the authoring tool	Explain the use of basic constructs of the scripting language (Variables, Conditionals, Loops, Boolean Logic, Functions)  Explain the main data types/object classes, Utilise the authoring tools event model  Explain how to respond to user input and other events  Describe the key data types/object classes provided by the authoring tool	Multimedia Lab:  White board.  Multimedia PC with projector  Macromedia/Adobe Flash.  Network / Internet access.	Practice writing scripts in adobe flash	Show students scripting language in adobe flash	List the basic constructs of the scripting language

<b>WEEK</b>	<b>GENERAL OBJECTIVE: 2.0 Know how to apply scripts to create animation</b>					
	2.0 Explain the importance of Scripts in animation	Discuss scripts in animations and their uses in object display.	Multimedia Lab: White board.  Multimedia PC with projector  Macromedia/Adobe Flash.  Network / Internet access.	Create an animation using scripts to dynamically load and display objects	Assists the students in creating animation using scripts and dynamically load and display objects	Describe the concept of scripts in creating animations
	2.2 Describe the concept of scripts to display object					
	2.3 Describe factors Controlling the visibility and location of scripts					
<b>WEEK</b>	<b>GENERAL OBJECTIVE: 3.0 Implement interactivity through the creation of custom scripts</b>					
5	3.1 Define custom scripts	Explain how to use scripting to control navigation between screens  Explain how to create scripted animation	Multimedia Lab: White board.  Multimedia PC with projector.  Macromedia/Adobe Flash.  Network / Internet access.	Create an interactive animation using custom scripts	Assists the students in using custom scripts to create interactivity within animations.	Define custom scripts
	3.2 Utilize scripting and buttons to control navigation between screens					
	3.2 Make use of scripted animation to control the presentation of assets					

WEEK	<b>GENERAL OBJECTIVE: 4.0</b> Know how to dynamically load and control multiple locally stored assets					
6	<p>4.1 Explain the concept of Dynamically loading and manipulating images</p> <p>4.2 Explain the concept of Dynamically loading and manipulate audio</p> <p>4.3 Explain the concept of Dynamically loading and manipulate video</p>	<p>Explain scripting to dynamically load images and control location, transparency, transformations</p> <p>Explain using scripting language to dynamically load audio files and control playback, volume, visualization</p> <p>Explain how to use scripting to dynamically load video files and control playback volume, queue points</p>	<p>Multimedia Lab:</p> <p>White board.</p> <p>Multimedia PC with projector</p> <p>Macromedia/Adobe Flash.</p> <p>Network / Internet access.</p>	<p>Identify the process of how to dynamically load and control multiple locally stored assets in the authoring tool</p>	<p>Show the students how to dynamically load and control multiple locally stored assets in the authoring tool</p>	<p>Discuss the concept of image, audio and video in animation</p>
WEEK	<b>GENERAL OBJECTIVE: 5.0</b> Know how to Save and retrieve user generated data locally					
7	<p>5.2 Explain simple forms within the authoring tool</p> <p>5.2 Describe how to Retrieve and save data from the users local PC</p>	<p>Explain how to create simple forms</p> <p>Explain how to retrieve and save data from the users local PC</p>	<p>Multimedia Lab:</p> <p>White board.</p> <p>Multimedia PC with projector</p> <p>Macromedia/Adobe Flash</p>	<p>Practice data storage and retrieval</p>	<p>Show the process of saving and retrieving user generated data locally</p>	<p>Discuss simple forms within the authoring tool</p>

			Network / Internet access.			
<b>WEEK</b>	<b>GENERAL OBJECTIVE: 6.0 Understand XML and its utilization</b>					
	6.1 Define XML	Explain how to import, parse and export XML data	Multimedia Lab:	Produce a simple media radio	Guide students to create a simple media radio	Define XML
	6.2 Explain how to Import, parse and export XML data	Explain how to use XML play/favorites lists to construct a simple media player	White board.			
	6.3 Explain XML utilization, play/favorites lists to construct a simple media player		Multimedia PC with projector			
			Macromedia/Adobe Flash			
			Network / Internet access.			
<b>WEEK</b>	<b>GENERAL OBJECTIVE: 7.0 Know the procedure of saving and retrieving remote data</b>					
	7.1 Explain remote data storage over a network utilizing web and/or media servers.	Describe how to save and retrieve data over a network utilizing web and/or media servers	Multimedia room:			Describe a media server
	7.2 Describe the processes of retrieving stored remote data		White board.			
			Multimedia PC with projector			
			Network / Internet access.			

### Assesment

Type of Assessment	Purpose and Nature of Assessment	Weighting (%)
Examination	Final Examination (written) to assess knowledge and understanding	40
Practical / Projects	To be assessed by the teacher	60
Total		100

PROGRAMME: NATIONAL DIPLOMA IN MULTIMEDIA TECHNOLOGY  
COURSE: USER-CENTRED DESIGN (UCD) FOR MULTIMEDIA  
CODE: MMT 223  
SEMESTER: 3  
CREDIT UNIT: 3  
DURATION: 15 WEEKS  
GOALS: The course is designed to enable students apply basic user-centered design principles to the multimedia Products

## **General Objectives**

1. Describe the characteristics of usable multimedia products
2. Apply the basic principles of user interface design
3. Understand end user requirements
4. Organise and structure contents
5. Design appropriate navigation structures
6. Create prototypes
7. Describe basic usability evaluation techniques
8. Ensure designs include appropriate levels of accessibility

<b>Programme:</b> National Diploma in Multimedia Technology			<b>Course Code:</b>	MMT223	<b>Contact Hours:</b> 4 hours /week	
<b>Course:</b> USER CENTERED DESIGN FOR MULTIMEDIA					<b>Theoretical:</b> 1 hours /week	
<b>Year:</b> 2 <b>Semester:</b> 1			<b>Pre-requisite:</b>	None	<b>Practical:</b> 2 hours /week	
<b>GOAL:</b> To enable students apply basic user centred design principles to the design of multimedia products.						
<b>COURSE SPECIFICATION:</b> Theoretical Contents				Practical Contents:		
<b>General Objectives:</b> 1.0 Describe the characteristics of usable multimedia products applications						
WEEK	Specific Learning Objective	Teachers Activities	Learning Resources	Specific Learning Objectives	Teachers Activities	Evaluation
	1.14 Define user-centered design 1.15 Describe the stages of user-centered design 1.16 Identify good and poor examples of usability	Explain user-design	Multimedia Room: White board. Multimedia PC with Projector. Necessary software.			What is user-centered design.  Enumerate the stages of user-centered design.
WEEK	<b>GENERAL OBJECTIVE:</b> 2.0 Apply the basic principles of user interface design					
	2.1 Explain user-interface design 2.2 State colour and layout principles	Discuss user-interface Explain colour and layout	Multimedia Room	Apply colour selection and layout principles	Support students in applying colour selection and layout	Multimedia Lab

					principles	
	2.3 Describe the principles of Typography	Explain the role of typography in supporting usability and provide guidelines	Multimedia Room	Apply Typography principles to support user ability	Assist students to apply principles of typography to support user ability	Explain principles of typography
WEEK	<b>GENERAL OBJECTIVE: 3.0</b> Understand end-user requirements					
	3.1 Describe user types as it relates to different personas  3.2 Describe users tasks through the creation of Scenarios	Explain user types in relation to personas. Review suitable examples  Explain tasks analysis using relevant scenarios	Multimedia Room			Explain user type in relation to personas
WEEK	<b>GENERAL OBJECTIVE: 4.0</b> Organise and structure content					
	4.1 Explain content types  4.2 Define information architecture	Discuss how content can be grouped such as card sorting  Explain the concept of information architecture using diagrams	Multimedia Lab	Create information architecture diagrams	Assist students to create information architecture diagrams	Discuss content types

WEEK	<b>GENERAL OBJECTIVE: 5.0</b> Design appropriate navigation structures					
	5.1 Describe conventions for providing navigation	Explain conventions for providing navigation				Explain conventions for providing navigations
	5.2 Describe users navigation requirements	Explain common usability issues associated with navigation				
	5.3 Identify appropriate navigation structures	Describe alternative navigation structures including hierarchical and linear.		Select navigation structures based on users' needs	Assist students to device navigation structures	
WEEK	<b>GENERAL OBJECTIVE: 6.0</b> Create prototypes					
	6.1 Define prototype	Explain how different techniques for prototyping can be used within UCD	Multimedia Lab	Create wire frame prototypes	Help students to create a simple wireframe prototype	Create wire frame prototypes
	6.2 Explain the role of prototyping					
WEEK	<b>GENERAL OBJECTIVE: 7.0</b> Describe basic usability evaluation techniques					
	7.1 Explain the role and process of Heuristic Reviews	Describe role of Usability evaluation	Multimedia Room	Perform a heuristic review	Assist students to undertake a heuristic review	Differentiate between Heuristic and Expert Reviews
	7.2 Explain the role and process of Expert Reviews	Provide guidelines on how to select an appropriate technique				
	7.3 Explain the role and		Multimedia Room	Perform a simple	Assist students	

	process of end-user testing	<p>Explain heuristic and expert reviews</p> <p>Describe the characteristics of usability testing techniques and provide guidelines on how to perform a usability test.</p>		usability test	to perform a simple usability test and analyse the results	
<b>WEEK</b>	<b>GENERAL OBJECTIVE: 8.0</b> Ensure designs include appropriate levels of accessibility					
	<p>8.1 Explain the scope and importance of accessibility</p> <p>8.2 Explain relevant accessibility standards and requirements</p>	<p>Explain the scope and importance of accessibility.</p>				<p>Explain relevant accessibility standards and requirements</p>

**PROGRAMME:** NATIONAL DIPLOMA IN MULTIMEDIA TECHNOLOGY

**COURSE:** PROJECT

**CODE:** MMT224

**SEMESTER:** 4

**CREDIT UNIT:** 4

**DURATION:** 15 WEEKS

**GOALS:** The course is designed to enable students utilize the skills developed within their course of study, to produce a Multimedia application/production.

### **General Objectives**

1. Develop a concept for a promotional multimedia application/production.
2. Document the design of the application
3. Execute the multimedia application/production.
4. Present the final multimedia application/production to an audience

<b>PROGRAMME: NATIONAL DIPLOMA IN MULTIMEDIA TECHNOLOGY</b>		
<b>COURSE: Project</b>	<b>COURSE CODE:MMT224</b>	<b>PRACTICAL HOURS 4.</b>
<b>GOAL:</b> The course is designed to enable students utilize the skills of Multimedia application/production.		

## FACILITIES FOR MULTIMEDIA TECHNOLOGY

- i. Multimedia Laboratory;**
- ii. Digital Audio Studio;**
- iii. Digital Video Studio;**
- iv. Digital Graphics/Photographic Studio;**
- v. Drawing/Design Studio.**
- vi. VIEWING/ DISPLAY ROOM**

## EQUIPMENT CHECKLIST FOR MULTIMEDIA

<b>MULTIMEDIA LAB</b>			
<b>S/N</b>	<b>HARDWARE/SOFTWARES</b>	<b>QTY</b>	<b>REMARKS</b>
<b>1</b>	Multimedia PC	31 (per stream) and lecturer	
<b>2</b>	<b>Scanner:</b> flatbed scanner	2	
<b>3</b>	Photocopier	2	
<b>3</b>	31 Webcams	All systems	
<b>4</b>	62 Speakers	All systems 2 per 1	
<b>5</b>	Computer USB/point connection microphone	All systems	

<b>6</b>	Printers (Coloured and Black and white)	<b>2 (1 each)</b>	
<b>9</b>	Graphic Tablets	<b>2</b>	
<b>10</b>	<b>Multimedia Authoring Software</b> (Macromedia Flash (2D/3D, StudioMax, GIF Animator, Macromedia Director, etc)	Installed	
<b>9</b>	<b>Web Editor</b> (Notepad and PSPad etc), HTML, Word Press, MS Office, MySQL	All systems	
<b>10</b>	<b>Graphic/Image Editor</b> ( PhotoScape, CorelDraw, AutoCad etc), Adope suite	All systems	
<b>11</b>	Multimedia Projector	<b>2</b>	
<b>12</b>	Internet connection	<b>Broadband</b>	
<b>13</b>	SmartBoard	<b>1</b>	
<b>*14</b>	VR Google or Cardboard/Players (optional)	<b>2</b>	
<b>15</b>	3D SMART TV	<b>1 44 inches</b>	
<b>16</b>	3D PLAYERS	<b>1</b>	
<b>17</b>	3D DISCS	<b>5 pieces minimum</b>	
<b>*18</b>	Multimedia Project Production Phase Wall Chart	<b>1</b>	
<b>19</b>	External Hard Drive 1 Terrabyte	<b>5</b>	
<b>20</b>	Evidence of Active and Functional Online/Social Media (Twitter, YouTube etc) presence		

<b>AUDIO,DIGITAL and Virtual STUDIOS</b>			
	<b>LIST OF EQUIPMENT</b>	<b>QTY</b>	<b>REMARKS</b>
1	Microphones <uni, oml and bi 2 each>	<b>6</b>	
2	<b>Digital Audio Recorder</b> (Record at least WAV or MP3 format, at 16-bit/ 44.1kHz; use high-capacity flash storage media; provide USB connection and connection for an external microphone.	<b>5</b>	
3	<b>Audio Headphones</b>	<b>5</b>	
4	<b>Audio Editor</b> (Adobe Audition, Audacity, SoundForge, AudioProTools, Sibelius etc)	All systems	
5	<b>MIDI Keyboards</b>	<b>1</b>	
6.	<b>Digital Audio player</b>	<b>3</b>	

<b>DIGITAL VIDEO STUDIO</b>			
s/n	<b>LIST OF EQUIPMENT</b>	<b>QTY</b>	<b>REMARKS</b>
1	Digital Video Cameras (HD) chain	2	
2	DVD players	2	
3	External Hard drive 1Terrabyte	4	
4	<b>Video Editor</b> (Adobe Premiere , Pinnacle studio, Final Cut Pro,	All system	

	Movie Maker etc)		
5	TV Sets	<b>2</b>	
6	Digital Vision mixer	<b>1</b>	
7	Microphones <uni, oml and bi 2 each>	<b>6</b>	
8	Camera Headphones	<b>2</b>	
9	Light reflector	<b>10</b>	
10	Video Camera lens	<b>5</b>	
11	Extra Batteries	<b>2</b>	
12	Storage devices (flash 2, memory card 10, Hard drive 1 terabyte)		
13	Tripod and Dolly	<b>2</b>	
14	UPS	<b>2</b>	
15	Fire Extinguisher and Sand bucket	<b>2</b>	

**DIGITAL GRAPHICS/PHOTO STUDIO**

1	DSLR Camera (35)	5
2	Assorted lenses (Telephoto; Zoom; Fish eye)	2 each.
3	Assorted Photographic studio lights	2 each
4	Assorted Canvas Backdrop	5
5	Studio Lambs	2
6	Studio light Reflector	5
7	Digital Photo Printers	2
8	External Hard Drives/Memory	2
9	Paper Trimmer	2
10	Scissors	10
11	USB Cables	4

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<b>DRAWING/DESIGN STUDIO</b>		<b>REMARKS</b>
1	30 workstation (drawing tables with lightbox)	<b>30</b>
2	<b>Drawing Sheet (cardboard, bond sheet, tracing paper) 3rims each</b>	
	Storyboard Template 10 Rims	
3	Adequate Lighting system	
4	Light table	<b>1</b>

<b>VIEWING/ DISPLAY ROOM</b>
A large room for film preview and display of students Works

**CURRICULUM REVIEW WORKSHOP FOR NATIONAL DIPLOMA (ND) MULTI MEDIA TECHNOLOGY. KADUNA.**

**LIST OF PARTICIPANTS**

<b>S/N</b>	<b>NAME</b>	<b>ORGANISATION</b>	<b>PHONE NUMBER</b>	<b>E-MAIL ADDRESS</b>
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