

Painting and Decorating - National Technical Certificate (NTC) and Advanced National Technical Certificate (ANTC)

Advanced Courses

Building Science I	2
Building Science II.....	7
Building Drawing II	14
Screen Process Printing.....	19
Decorative Finishes.....	23
Advanced Spray Painting	34

Building Science I

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN CARPENTRY AND JOINERY.			
MODULE: BUILDING SCIENCE - I		Module Code: CBC - 20	Contact Hours: 3hrs Theory
Course Specification: THEORETICAL CONTENT			
General Objective: 1.0: Understand The Basic Principles Of Thermal Movements In Building And Building Materials.			
Week	Specific Learning Outcome:	Teachers Activities	Resources
1-7	<p>1.1 Define the following terms:</p> <ul style="list-style-type: none"> a. thermal conductivity b. thermal resistivity c. heat transmittance coefficient or "U" value. d. Thermal emissivity e. Thermal absorptivity. <p>1.2 State the factors which determine the magnitude of the above terms for a structural unit or building materials.</p> <p>1.3 Explain the variation of the amount of heat transmitted between the surface of a slab of building material of uniform thickness and composition.</p>	<ul style="list-style-type: none"> • Compute the 'u' and 'k' values for structural units or building materials from given data. • Student to define and explain all the thermal terms.. 	<ul style="list-style-type: none"> • 'U' and 'u' values for structural units.

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN CARPENTRY AND JOINERY.			
MODULE: BUILDING SCIENCE - I		Module Code: CBC - 20	Contact Hours: 3hrs Theory
Course Specification: THEORETICAL CONTENT			
General Objective 2.0: Sound Transmission And Control: Know The General Principles Of Sound Transmission And Control.			
Week	Specific Learning Outcome:	Teachers Activities	Resources
3 - 4	2.1 Explain the general principles of sound transmission. 2.2 Explain the following terms. a. air born sound b. structure-born sound c. sound reflection, reverbration and reveration time. d. Impact sound 2.3 Explain the general principles and methods of sound control.	<ul style="list-style-type: none"> • Measure sound transmission level (intensity) in decibels. • By visiting an acoustic building describe the general principles and methods of sound control (Insulation and absorption) in buildings e.g. • Principle of discontinuity • Mass law • Sound reduction at source, etc. 	<ul style="list-style-type: none"> • Sound measuring instruments • Sound producing source. • A coustic building
General Objective 3.0: Understand The Basic Principles Of Lighting			
Week	Specific Learning Outcome:	Teachers Activities	Resources
5-6	3.1 State the general functions of lighting. 3.2 Define the following terms: a. illumination b. luminous flex c. illuminance d. luminance e. day light factor 3.3 Distinguish between disability glare and discomfort glare. 3.4 State ways by which glare is controlled in buildings.	<ul style="list-style-type: none"> • Explain the general functions of lighting e.g • To illuminate the internal envelope and contents; • To illuminate task (reading, working with equipment etc). to the extent appropriate to optimal functioning of the eye. • Emphasize the following ways of controlling share in buildings. • Types, sizes, number and position of openings 	<ul style="list-style-type: none"> • Source of light • Hall with good lighting system. • Hall with bad lighting system.

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN CARPENTRY AND JOINERY.			
MODULE: BUILDING SCIENCE - I		Module Code: CBC - 20	Contact Hours: 3hrs Theory
Course Specification: THEORETICAL CONTENT			
General Objective 3.0: Understand The Basic Principles Of Lighting			
Week	Specific Learning Outcome:	Teachers Activities	Resources
	3.5 Determine the intensity of illumination due to a given source of light. 3.6 Calculation of day light factor. 3.7 Describe the main classes of lighting. 3.8 State the uses of the main classes of lighting. 3.9 Explain the interdependence of color and lighting in buildings.	<ul style="list-style-type: none"> • Colour and texture of building surfaces. • Types of lighting fittings • Structure of internal envelope etc. • Calculate day-light factor from given date and by direct measurement. • Emphasize the following classes of lighting. • Direct lighting • Indirect lighting • General lighting • Luminous lighting 	<ul style="list-style-type: none"> • Data for calculating day-light factor • Instrument for calculating day-light factor by direct measurement.
General Objective 4.0: Understand The Principles Of Electricity Supply In Buildings			
Week	Specific Learning Outcome:	Teachers Activities	Resources
7-8	4.1 State the difference between alternating current and direct current. 4.2 Explain the construction and working principles of generators, motors and transformers. 4.3 Explain with the aid of experiments the heating, lighting, magnetic and chemical effects of electric current. 4.4 Calculate the power and energy consumption in simple circuits. 4.5 Explain the function of earthing in electrical circuits. 4.6 State the purpose and explain the functioning of circuit breakers and fuses. 4.7 Illustrate the correct method of distributing electrical power from the mains to socket outlets and lighting points in house wiring systems. 4.8 Compute total electrical load for a given load for a given house wiring. 4.9 Calculate fuse capacity for house wiring system. 4.10 Identify dangers of electricity and essential safety measures against them.	<ul style="list-style-type: none"> • Carry out experiments to demonstrate the heating, lighting, magnetic, and chemical effects of electric current. • Mathematical calculation of power and energy consumption in simple circuit. • Identify earthing in an electrical circuit. E.g in a bungalow. • Identify circuit breakers and fuses in a building. • Emphasize the correct method of distributing electrical power from the mains (NEPA line or stand by generator) to socket outlets and lighting points in house wiring systems. • Interpret electrical installation drawings of a small bungalow or two storey building. • Emphasize the dangers of electricity and enumerate the essential/necessary safety measures against them. 	<ul style="list-style-type: none"> • Simple electric circuits • Electric heater • Electric bus • Solenoid • circuit breakers • fuses • NEPA line • Generator • Bungalow with complete wiring system • Electrical installation. • Drawing of a small project i.e. the bungalow.

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN CARPENTRY AND JOINERY.			
MODULE: BUILDING SCIENCE - I		Module Code: CBC - 20	Contact Hours: 3hrs Theory
Course Specification: THEORETICAL CONTENT			
General Objective 5.0: Know The Basic Principles Of Plant Installation In Buildings.			
Week	Specific Learning Outcome:	Teachers Activities	Resources
9-10	5.1 Explain the working principles of lift and escalators. 5.2 Outline safety, principles for lifts and escalators. 5.3 Explain the general principles of air-conditioning.	<ul style="list-style-type: none"> • Visit a building with escalators and or lift. • Emphasize maintenance principles for lifts and escalators. 	<ul style="list-style-type: none"> • Escalators • Air conditioners
	5.4 Describe various mechanical methods of ventilation. 5.5 Explain the principle of mechanical ventilation. 5.6 Outline the general installation requirements for central and room air conditioning equipment in dressings. 5.7 Define the following: a. relative humidity b. dew point 5.8 Explain the occurrence of condensation in buildings. 5.9 Describe methods of control of condensation.	<ul style="list-style-type: none"> • Illustrate the application of turbulent and non turbulent flow in domestic water supply and drainage • Determine experiments the rate of flow from an orifice. • Calculate the velocity of flow of water from given date • Calculate pipe sizes for drains or water supply from given date. • Experimentally explain the general principles of installation of cold and hot water supply systems having water pumps. 	<ul style="list-style-type: none"> • Orifice • water containers • water • data for calculating velocity of flow of water.
	5.11 Explain the principle of turbulent and non-turbulent flow. 5.11 Explain the followings terms and state their importance in the design and installation of piped water supply system: a. static head of water b. velocity head c. friction head d. pressure head e. water hammer f. coefficient of velocity g. coefficient of discharge.		

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN CARPENTRY AND JOINERY.

MODULE: BUILDING SCIENCE - I	Module Code: CBC - 20	Contact Hours: 3hrs Theory
-------------------------------------	------------------------------	-----------------------------------

Course Specification: THEORETICAL CONTENT

General Objective 6.0: Analyse Forces In Simple Building Structures And Structural Frame Work.

Week	Specific Learning Outcome:	Teachers Activities	Resources
11-12	<p>6.1 State the laws of static equilibrium.</p> <p>6.2 Explain with illustrative examples the laws of static equilibrium e.g. $\sum V = 0$</p> <p>6.3 Determine the magnitude and position of the resultant of a simple system of coplanar forces in.</p> <p>6.4 Analyse forces in simple pin-jointed frame work.</p>	<ul style="list-style-type: none"> • Determine the magnitude and position of the resultant of a simple system of coplanar forces by: - graphical method. • Method of resolution experiment. • Experiment. • Analyse forces in simple pin-jointed frame-work • by method of resolution of force diagram method • method of section 	<ul style="list-style-type: none"> • Charts • Model of simple pin-jointed frame work.
	<p>6.5 Identify common loading systems for various building structures</p> <p>6.6 Determine beam reaction, shear force and bending moments in simply supported beams under various loading systems using.</p> <p style="padding-left: 40px;">a. Link polygon system</p> <p style="padding-left: 40px;">b. method of resolution experiments.</p> <p>6.7 Define the following properties of structural sections. centre of gravity, moments of inertia, radius of inertia, radius of gyration section modulus</p>	<ul style="list-style-type: none"> • Emphasize the following common loading systems concentrated load on beams, straddles and nodes in frame-works. • Knife-edge load on partitions or walls. • Uniformly distributed load such as self-weight wind load,. • Distributed load with linear variation such as loads against piling retaining walls triangular load such as block-work over opening. • Calculate beam reactions under various loads. 	<ul style="list-style-type: none"> • Model • beam • sections
	<p>6.8 State the general theory of simple bending i.e.</p> $\frac{E}{R} = \frac{M}{I} = \frac{F}{V}$	<ul style="list-style-type: none"> • Determine the value of the following for a given section. • Centre of gravity • Moments of inertia • Radius of gyration • Section modulus • Determine maximum bending stress and moment of resistance of beam sections. 	
13	Examinations = 100%		

Building Science II

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN CARPENTRY AND JOINERY.			
MODULE: BUILDING SCIENCE II		MODULE CODE: CBC 21	Contact Hours: 3hrs theory & 1 Hr. practical
MODULE Specification: THEORETICAL CONTENT			
General Objective 1.0: Know The General Process Of Manufacture, Properties And Uses Of Different Types Of Cement.			
Week	Specific Learning Outcome:	Teacher Activities	Resources
1	<p>1.1 Outline the manufacturing process, basic composition properties and uses of the following types of cement:</p> <ul style="list-style-type: none"> a. ordinary Portland cement b. rapid hardening Portland c. extra rapid hardening Portland d. low heat Portland cement e. blast-furnace Portland cement f. super-supplanted cement g. high alumina-cement h. colored Portland cement i. hydrophobic cement j. pozzolana-cement 	<ul style="list-style-type: none"> • Describe the manufacturing process of cement. • Name the different types of cement and explain uses and areas of application. 	<ul style="list-style-type: none"> • Chalk board. • Lesson note. • Specimen of cement of different types.
	<p>1.2 State factors which influence setting time, strength and hardness of ordinary Portland cement.</p> <p>1.3 Describe the test procedure and carry out standard tests to determine:</p> <ul style="list-style-type: none"> a. strength b. soundness c. setting time d. hardness; of ordinary Portland cement. <p>1.4 State and justify the essential precautions in the storage and use of cements in 1.1 above.</p>	<ul style="list-style-type: none"> • Explain the main features of each type of cement. • Explain the factors that influence the setting time, strength and hardness of Portland cement. 	<ul style="list-style-type: none"> • Lesson note. • Cement specimens. • Chalk board.

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN CARPENTRY AND JOINERY.			
MODULE: BUILDING SCIENCE II		MODULE CODE: CBC 21	Contact Hours: 3hrs theory & 1 Hr. practical
MODULE Specification: THEORETICAL CONTENT			
General Objective 2.0: Know The Manufacture, Properties And Uses Of Lime And Gypsum Plasters.			
Week	Specific Learning Outcome:	Teacher Activities	Resources
2	2.1 Explain the differences in the manufacture and composition of lime and gypsum plasters. 2.2 State the classifications and uses of lime and gypsum plasters. 2.3 Describe the method of application of lime and gypsum and state essential precautions.	<ul style="list-style-type: none"> • Define: "Lime", " Gypsum" and explain their uses in building construction processes. • Discuss the manufacturing, properties, and uses of lime and gypsum. • Explain the methods of application of the materials. 	<ul style="list-style-type: none"> • Lesson note • Chalk board Posters • Specimen of lime and gypsum.
General Objective: 3.0 Carry Out Stand Tests To Determine The Quality Of Aggregates.			
Week	Specific Learning Outcome:	Teacher Activities	Resources
3	3.1 Describe procedures of sieve analysis and determine aggregate grading by sieve analysis. 3.2 Describe the test procedure and carry out laboratory tests to determine silt content of given sample of aggregates. 3.3 Describe the test procedure and carry out the test to determine the crushing values of a given sample of aggregate. 3.4 Describe the test procedure and carry out bulking test.	<ul style="list-style-type: none"> • Define "aggregate" • Explain methods of grading of aggregates • Conduct silt content, crushing value and bulking tests and guide the students to perform similar tests. 	<ul style="list-style-type: none"> • Aggregates • Lesson notes • Posters • Samples of Aggregates

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN CARPENTRY AND JOINERY.			
MODULE: BUILDING SCIENCE II		MODULE CODE: CBC 21	Contact Hours: 3hrs theory & 1 Hr. practical
MODULE Specification: THEORETICAL CONTENT			
General Objective: 4.0: Know Different Types Of Mortar And Their Application.			
Week	Specific Learning Outcome:	Teacher Activities	Resources
4	<p>4.1 Outline the general desirable properties of mortar e.g. good workability and water retentivity, adequate cohesion and adhesion, strength, durability, tolerable shrinkage, etc.</p> <p>4.2 Name different types of mortar, their properties, typical mix proportions to be taken in the proportioning and mixing of mortar.</p> <p>4.3 Explain the precautions to be taken in the proportioning and mixing of mortar.</p>	<ul style="list-style-type: none"> • Define “Mortar” • State the properties of mortar and typical mix proportion. 	<ul style="list-style-type: none"> • Mortar • Lesson notes • Charts
	<p>4.4 State the basic considerations in the choice of mortar e.g weather characteristics, appearance, type of job, etc.</p> <p>4.5 Describe the procedure and carry out an experiment to determine the air content of plasticised mortar.</p>	<ul style="list-style-type: none"> • Demonstrate the procedures for determining air content of plasticised mortar. 	<ul style="list-style-type: none"> • Mortar. • Lesson notes. • Posters.
General Objective 5.0: Know The Process Of Manufacture, Properties And Uses Of Different Clay Products.			
Week	Specific Learning Outcome:	Teacher Activities	Resources
5	<p>5.1 Name and state the properties and uses of different clay products in the building industry. e.g. clay-bricks (engineering bricks, facing bricks, common bricks, and specials), clay blocks, clay roofing tiles, clay floor tiles and quarries, vitrified clay pipes, etc.</p> <p>5.2 Outline the process of manufacturing of the products in 5.1 above.</p> <p>5.3 Determine hardness, compressive strength, porosity and permeability of given sample of bricks by laboratory methods.</p>	<ul style="list-style-type: none"> • Define “Clay” and State the properties of clay. • Discuss the process of manufacturing clay bricks blocks, tiles etc. • Demonstrate how to determine hardness, compressive, strength porosity and permeability test of bricks. 	<ul style="list-style-type: none"> • Clay. • Clay Products. • Lesson note. • Chalkboard. • Clay bricks. • Test Instruments.

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN CARPENTRY AND JOINERY.			
MODULE: BUILDING SCIENCE II		MODULE CODE: CBC 21	Contact Hours: 3hrs theory & 1 Hr. practical
MODULE Specification: THEORETICAL CONTENT			
General Objective 6.0: Know Different Types Of Building Rocks Their Sources And Uses.			
Week	Specific Learning Outcome:	Teacher Activities	Resources
6	<p>6.1 Classify natural rocks and igneous, sedimentary and metamorphic rocks.</p> <p>6.2 Describe the characteristics and uses of different types of rocks of commercial value in the construction under the classification in 6.1 above.</p> <p>6.3 Describe the sources of rocks in 5.2 and their quarrying methods. e.g., igneous rocks, sedimentary rocks, metamorphic rocks, granites, sands, limestone, marble, slate.</p>	<ul style="list-style-type: none"> • Show samples of building stones and explain their characteristics. • Name sources of building stone. 	<ul style="list-style-type: none"> • Lesson note. • Posters. • Chalkboard.
General Objective 7.0: Understand The Production And Use Of Concrete As Structural Material			
Week	Specific Learning Outcome:	Teacher Activities	Resources
7	<p>7.1 Outline the desirable qualities of the ingredients of mass and reinforced concrete.</p> <p>7.2 Explain the effects of aggregate grading, water cement ratio compaction and curing on the compressive strength of concrete.</p> <p>7.3 Describe methods of proportioning and mixing concrete materials and placing compacting, curing and protecting green concrete.</p>	<ul style="list-style-type: none"> • Define concrete and describe the composition of concrete. 	<ul style="list-style-type: none"> • Concrete. • Aggregates. • Lesson note concrete cube. • Equipment.
	<p>7.4 Carry out slump and cube test and interpret results.</p> <p>7.5 Carry out permeability test on given sample of concrete.</p> <p>7.6 Estate from project drawings the quantities of concrete materials required for the execution of the project.</p> <p>7.7 Compute the quantities of batch materials from prescribed or designed mix.</p> <p>7.8 Explain the general principles in the reinforcement of beams, columns, floor slabs, walls, retaining walls, concrete tanks, can designed mix.</p>	<ul style="list-style-type: none"> • Guide students to carry out slum test and permeability tests on given sample of concrete. 	- do -

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN CARPENTRY AND JOINERY.			
MODULE: BUILDING SCIENCE II		MODULE CODE: CBC 21	Contact Hours: 3hrs theory & 1 Hr. practical
MODULE Specification: THEORETICAL CONTENT			
General Objective 8.0: Know The Characteristics, Methods Of Conversion And Uses Of Different Types Of Timber In The Building Industry.			
Week	Specific Learning Outcome:	Teacher Activities	Resources
8	8.1 Classify timber as hard-wood and soft-wood and state the distinguishing characteristics. 8.2 Describe the structure of timber and state the functions of the parts. 8.3 Describe different methods of timber conversion and state the merits of each method. 8.4 Explain the purpose of seasoning, timber and describe various methods of seasoning and preserving timber, 8.5 Identify nature of defects in timber and explain their causes. 8.6 Identify various causes of deterioration in converted timber and state necessary precautions. 8.7 Explain the BS system of grading timber. 8.8 Identify various type of manufactured boards and sheet and explain their characteristics and uses. 8.9 Carry out cleavage test, static bending test and hardness test on given specimen of timber.	<ul style="list-style-type: none"> • Explain the sources of timber in Nigeria. • Discuss the uses of timber in the building industry. • Explain the structure of timber. • Explain the process of timber production up to point of use. • Explain the causes of timber deterioration and how these could be controlled. 	<ul style="list-style-type: none"> • Lesson note. • Specimens of different types of timber. • Chart. - do -
General Objective 9.0: Understand The Characteristics Various Metals Used In The Building Industry.			
Week	Specific Learning Outcome:	Teacher Activities	Resources
9	9.1 Identify various metals used as structural components in building and state their mechanical properties. E.g. brass, aluminium, mild steel, galvanized iron, copper, lead, stainless steel, wrought iron, cast iron, medium carbon steel. 9.2 Explain the process of corrosion of the metals in 9.1 above and describe the necessary preventive measures.	<ul style="list-style-type: none"> • List the various kinds of metal - ferrous and non-ferrous metals. • Define corrosion and explain its process and effect on metal. 	<ul style="list-style-type: none"> • Samples of metals. • Lesson note. • Charts.

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN CARPENTRY AND JOINERY.			
MODULE: BUILDING SCIENCE II		MODULE CODE: CBC 21	Contact Hours: 3hrs theory & 1 Hr. practical
MODULE Specification: THEORETICAL CONTENT			
General Objective: 10.0: Know The Properties And Application Of Various Types Of Paints And Varnishes			
Week	Specific Learning Outcome:	Teacher Activities	Resources
10	10.1 Describe the basic constituents of paints. 10.2 Name types of paints and explain their composition, properties and uses. 10.3 Explain the functions of primer, under-coat and finishing paints. 10.4 Identify paint schemes for various building surfaces: e.g. wood, block-work, brick-work, steel, etc. 10.5 Estimate quantity of paint required for a given house painting job. 10.6 Carry out experiments to determine spreading power, drying times and permeability of a paint sample. 10.7 Carry out experiment to demonstrate the effect of alkali on a given sample of oil paint. 10.8 Explain the occurrence of defects in painting and state the necessary precautions. 10.9 Explain the need for surface preparation before painting.	<ul style="list-style-type: none"> • Define “Vanish” and “Paint” • Explain the basic components of paints • Use question and answer technique to explain the functions of primer and under-coat. - do - 	<ul style="list-style-type: none"> • Specimens of Vanish and Paints. • Lesson note.
General Objective 11.0: Understand The Manufacture, Properties And Uses of Plastics In Building.			
Week	Specific Learning Outcome:	Teacher Activities	Resources
11	11.1 Explain the basic chemical process of manufacture of plastics. 11.2 Distinguish between thermoplastics and thermosetting plastics. 11.3 Name different types of plastics in use in the building industry, describe their characteristics and uses. e.g. PVC, PVA, Polystyrene, silicones, etc.	<ul style="list-style-type: none"> • Define “Plastic”. • Explain the use of plastic materials in the construction industry. 	<ul style="list-style-type: none"> • Specimen of plastic materials. • Lesson note. Chalk board.

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN CARPENTRY AND JOINERY.			
MODULE: BUILDING SCIENCE II		MODULE CODE: CBC 21	Contact Hours: 3hrs theory & 1 Hr. practical
MODULE Specification: THEORETICAL CONTENT			
General Objective 12.0: Understand The Properties And Uses Of Adhesives In The Building Industry.			
Week	Specific Learning Outcome:	Teacher Activities	Resources
12	<p>12.1 Name different types of adhesives in the building industry, describe their characteristics and uses. E.g. animal glue, casein glue, amino-resins, epoxy resin, etc.</p> <p>12.2 Explain the action of adhesives and the need for surface preparation before application.</p> <p>12.3 Explain factors to be considered in the selection of adhesive for use.</p> <p>12.4 Explain with illustrative examples, the use of sealants and mastics in the building industry.</p> <p>12.5 Describe the test procedure and carry out standard test to determine the dry and wet strengths of given specimen of adhesive.</p>	<ul style="list-style-type: none"> • Define “Adhesive”. • Explain the use and importance of adhesives in construction work. • Prepare detailed notes. - do - 	<ul style="list-style-type: none"> • Samples of adhesives • Lesson note. • Chalk board. - do -
13	Examinations: Practical = 60% Theory = 40%		

Building Drawing II

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN PAINTING AND DECORATION

MODULE: BUILDING DRAWING II	MODULE CODE: CTD 23	CONTACT HOURS: 3hrs. Practical, 1hr Theory
------------------------------------	----------------------------	---

GOAL: This module is intended to provide the trainee basic knowledge of the principles of design of two storey building as well as enable him to interpret fairly complex architectural drawing

General Objectives:

Upon completion of this module, the trainee should be able to:

- 1 Understand the general principles of design of a two storey house
- 2 Draw the site and floor plans, elevations and sections of a specific two storey building.
- 3 Prepare essential detail drawing of components.
- 4 Draw detail plan of the electrical services
- 5 Prepare schedules.
- 6 Understand the principles and be able to prepare and interpret simple structural drawings.

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN PAINTING AND DECORATION

MODULE: BUILDING DRAWING II	MODULE CODE: CTD 23	CONTACT HOURS: 3hrs. Practical, 1hr Theory
------------------------------------	----------------------------	---

COURSE SPECIFICATION: THEORETICAL/PRACTICAL CONTENT

General Objective 1.0: Understand The General Principles Of Design Of A Two Story House.

Week	Specific Learning Outcome:	Teachers Activities	Resources
1 - 2	<p>1.1 Explain the importance of and relationship between function, form and beauty in building design.</p> <p>1.2 Describe the basic structural differences between a bungalow and a storey building.</p> <p>1.3 Explain the principles of balance and harmony as used in the design of elevations and general exterior of buildings.</p> <p>1.4 Describe the basic considerations in the planning of a storey (1) residential house.</p> <p>1.5 Describe the characteristics of a give plot plan (i.e. solar orientation, direction of prevailing winds, size of plot, access road, services, etc) and explain their influence on the pattern of design.</p> <p>1.6 Prepare a preliminary sketch design of a two storey building suitable for a specified plot of land</p>	<ul style="list-style-type: none"> • List the relationship between function, form and beauty in building design. • List the basic structural differences between a bungalow and a storey building. • Discuss the principles of balance and harmony used in design of elevations and exterior building. • Explain the basic structural considerations in planning of storey/residential house. • List characteristics of a given plot plan e.g. 	<ul style="list-style-type: none"> • Lesson plan • Pictures • Posters • Drawings
	<p>1.7 Justify the choice of materials for the proposed house in 1.6.</p>	<ul style="list-style-type: none"> • size of plot • access road • services etc • Explain the influence of the characteristics of a plot on the pattern of design. 	- do -
		<ul style="list-style-type: none"> • solar orientation • Sketch design of a two storey building suitable for 1.5m plot. • Explain the choice of materials for the proposed a based on a given specification house 	- do -

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN PAINTING AND DECORATION			
MODULE: BUILDING DRAWING II		MODULE CODE: CTD 23	CONTACT HOURS: 3hrs. Practical, 1hr Theory
COURSE SPECIFICATION: THEORETICAL/PRACTICAL CONTENT			
General Objective 2.0: Draw The Site And Floor Plans, Elevations And Sections Of A Specified Two Story Building.			
Week	Specific Learning Outcome:	Teachers Activities	Resources
3 - 4	<p>2.1 Draw presentation floor plans. (Presentation floor plans should show furniture arrangement as well as landscaping).</p> <p>2.2 Prepare the floor plans to suitable scale (Elevations may include: front, side, left, and right).</p> <p>2.3 Determine and draw to suitable scale essential sections. (use may be made of-set and part sections)</p> <p>2.4 Draw the elevations to suitable scale (Elevations may include front, side, left, and right).</p> <p>2.5 Draw the site plan. (site plan should indicate the drainage system, building line and access, landscaping, etc.)</p>	<ul style="list-style-type: none"> • Draw floor plans indicating • furniture arrangement • landscaping • Draw floor plans to scale i.e. ground and first floor. • Draw elevations to scale i.e. front, side, left and right. • Draw site plan showing. • Drainage system • Building line • Access road • Landscaping etc 	<ul style="list-style-type: none"> • Chalkboard • Drawing • Board, • Tee Square • Pencil • Set squares • Scale rule
General Objective 3.0: Prepare Essential Detail Drawing Of Components.			
Week	Specific Learning Outcome:	Teachers Activities	Resources
5-6	<p>3.1 Draw to suitable scales, essential details of components (Details may include: floor, stairs, screen walls, boundary wall, plumbing system, floor slabs, etc.)</p> <p>3.2 Prepare working drawings of the septic tanks and soak away suitable for the house.</p> <p>3.3 Draw the interior elevations and sections of the kitchen and utility room.</p> <p>3.4 Draw details of the kitchen and utility room cabinets.</p>	<ul style="list-style-type: none"> • Draw to scales details of components, such as floor stairs, and screen walls. • Make a working drawing of septic tank and soak away. • Draw the interior elevations. • Draw sections of kitchen. • Draw section of utility room. • Give students drawing assignment/project. 	<ul style="list-style-type: none"> • Charts • Posters • Drawing board • Papers • Tee squares • pencils

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN PAINTING AND DECORATION			
MODULE: BUILDING DRAWING II		MODULE CODE: CTD 23	CONTACT HOURS: 3hrs. Practical, 1hr Theory
COURSE SPECIFICATION: THEORETICAL/PRACTICAL CONTENT			
General Objective 4.0: Draw Detail Plan Of The Electrical Services			
Week	Specific Learning Outcome:	Teachers Activities	Resources
	4.1 Use the presentation floor plan to determine the type and location of electrical services. 4.2 Draw the electrical services plan	<ul style="list-style-type: none"> • Determine the type and location of electrical services on a floor plan. • Sketch electrical services plan. • Draw to scale the electrical services on a plan. • Give assignment and assess the student 	<ul style="list-style-type: none"> • Charts • Pictures • Drawing board • Tee square • Set square • Pencil
General Objective 5.0: Prepare Schedules			
Week	Specific Learning Outcome:	Teachers Activities	Resources
9-10	5.1 Prepare the following schedules: <ol style="list-style-type: none"> a. Doors b. Windows. c. Electrical installation d. Plumbing e. Painting f. Reinforcement schedule. 	<ul style="list-style-type: none"> • Prepare doors schedule • Prepare windows schedule • Prepare electrical installation schedule. • Prepare plumbing schedule • Prepare painting schedule • Prepare reinforcement schedule. • Give assignment on component scheduling and supervise and assess student 	<ul style="list-style-type: none"> • Charts • Drawing papers • Drawing board • Tee square • Set square • Pencil

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN PAINTING AND DECORATION			
MODULE: BUILDING DRAWING II		MODULE CODE: CTD 23	CONTACT HOURS: 3hrs. Practical, 1hr Theory
COURSE SPECIFICATION: THEORETICAL/PRACTICAL CONTENT			
General Objective 6.0: Understand The Principles And Be Able To Prepare And Interpret Simple Structural Drawings.			
Week	Specific Learning Outcome:	Teachers Activities	Resources
11-12	6.1 Interpret and apply conventional representation of structural elements. 6.2 Interpret simple structural design data e.g. design data for the two story project drawing in this module. 6.3 Prepare structural detail drawing from given design data and sketches. 6.4 Prepare and interpret bending schedules. 6.5 Trace and reproduce structural drawings.	<ul style="list-style-type: none"> • List conventional ways of representing structural elements. • Explain simple structural design data for two story project. • Prepare detail structural drawing from given data and scale • Prepare and interpret bending drawings • Trace structural drawings. • Reproduce structural drawings. 	<ul style="list-style-type: none"> • Charts • Drawing papers • Drawing instrument • Reproduction equipment. • Schedule of structural design data.
13	EXAMINATION: 100%		

Screen Process Printing

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN PAINTING AND DECORATION

MODULE: SCREEN PROCESS PRINTING | **MODULE CODE: CTD 21** | **CONTACT HOURS: 17hrs./WK**

GOAL: This module is intended to provide the trainee adequate knowledge and skill in screen printing.

General Objectives:

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

1. Know and use correctly tools, equipment and materials for screen process printing
2. Produce various types of stencils for screen printing
3. Carry out screen process printing jobs with the correct techniques and safety practices

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN PAINTING AND DECORATING			
Module: SCREEN PROCESS PRINTING		MODULE CODE: CPD 21	CONTACT Hours: 16hrs Practical, 1hr Theory
Module Specification: THEORETICAL CONTENT			
General Objective: 1.0 Know And Use Correctly Tools, Equipment And Materials For Screen Process Printing.			
Week	Specific Learning Objective:	Teacher Activities	Learning Resources
1 - 4	1.1 Describe and identify various screen process printing tools, e.g. a. Squeegees (assorted) b. Stencil knives (assorted) c. Palette knife d. Electric iron e. Screw driver f. Pencil brushes (assorted) etc.	<ul style="list-style-type: none"> The Teacher to describe and identify the various process printing tools Draw and label the tools Show the tools to the students. 	<ul style="list-style-type: none"> The tools: Pencil brushes. Screw drivers Electric irons Palette knife Stencil knife Squeegees
	1.2 Describe and identify various screen printing equipment: e.g. a. Screen frame (assorted) b. Printing tables (assorted) c. Exposure units d. Printing down frame e. Process camera f. Mesh stretchers etc.	<ul style="list-style-type: none"> Describe the various types of equipment used in screen printing. 	<ul style="list-style-type: none"> Pictures Lesson Plan Text book
5 - 12	1.3 Identify screen process printing materials: e.g. a. screen fabric (assorted) b. screen inks (assorted) c. films (assorted) d. emulsions (assorted) e. solvents, bichromates, printing stock (assorted)	<ul style="list-style-type: none"> Explain the materials used in screen printing. 	<ul style="list-style-type: none"> Pair of scissors Squeegee Stencil knife Palette knife Brushes A sponge Films Emulsions Solvents Bichromates, etc
	1.4 Describe the physical properties of screen process printing materials listed in 1.3 above and state their uses	<ul style="list-style-type: none"> Describe the printing materials and give short notes on each. 	<ul style="list-style-type: none"> Lesson plan Pictures Screen fabric Screen inks Films Emulsions Solvents, etc
13	EXAMINATIONS PRACTICAL= 70% THEORY=30%		

PROGRAMME: ADVANCE NATIONAL TECHNICAL CERTIFICATE IN PRINTING PROCESS			
MODULE: SCREEN PRINTING PROCESS		MODULE CODE: CPD 21	Contact hour: 16hrs Practical/wk
MODULE SPECIFICATION: Practical content			
General Objective: 1.0 Know How To Produce Various Types Of Stencils For Screen Printing.			
Week	Specific Learning Objective:	Teacher Activities	Learning Resources
1 - 3	1.1 Design art works for screen printing project by: a. Visualising and finishing a project. b. Separation of the colours from a given art work.	• The teacher to set-up an art work for screen painting by visualising.	• Charts. • Lesson plan • Screen printing materials • Screen printing tools
	1.2 Design art works using various lettering techniques. e.g. a. Use of transfer lettering b. enlarging or blowing out c. Paste-up etc.	• The teacher to design an art work using various lettering techniques;-	• Letter • Paste • Lesson plan • Chart • Ink.
	1.3 Determine the quantity of materials required to carry out a given screen printing job. Examples of materials to include substrates, screen fabric and inks.	• Perform an example of calculations of the materials needed for a particular job.	• Lesson plan • Text book • Calculator
	1.4 Estimate the time and cost of completing a given screen printing job taking into consideration; a. type of substrate to be printed b. type of stencil to be used c. number of colours to be printed.	• Do work examples of calculation of the cost of completing a given screen printing job.	- do -
General Objective 2.0: Carry Out Screen Process Printing Jobs With The Correct Techniques And Safety Practices.			
Week	Specific Learning Objective:	Teacher Activities	Learning Resources
6 - 10	2.1 Prepare the printing unit and materials using appropriate techniques. e.g (i)hanging of the frame a. registration b. mixing of ink c. drying.	• The teacher to prepare a printing unit and materials using appropriate techniques. • Guide the students to do same.	• Frame • Ink • Text book • Lesson plan • PVC sticker. • Textile pieces, etc.

PROGRAMME: ADVANCE NATIONAL TECHNICAL CERTIFICATE IN PRINTING PROCESS			
MODULE: SCREEN PRINTING PROCESS		MODULE CODE: CPD 21	Contact hour: 16hrs Practical/wk
MODULE SPECIFICATION: Practical content			
General Objective 2.0: Carry Out Screen Process Printing Jobs With The Correct Techniques And Safety Practices.			
Week	Specific Learning Objective:	Teacher Activities	Learning Resources
	2.2 Print out a given job using appropriate procedures. e.g. <ul style="list-style-type: none"> a. proofing b. print lightest colour first and dry c. print next colour and dry etc. Note: Every impression must be properly registered. Examples of surfaces to be used includes paper, pvc sticker, textile pieces, metal wood, glass, etc. Safety practices should be observed.	<ul style="list-style-type: none"> • Print out a sample job and ask students to do the same. 	<ul style="list-style-type: none"> • Lesson plan • Text book • Paper • Glass • Pvc sticker • Textile pieces • Metal wood.
11 - 12	2.3 Dry printed job on the drying rack or heat dry on the oven.	<ul style="list-style-type: none"> • Guide the students to dry a freshly printed job. 	<ul style="list-style-type: none"> • The dry job. • Lesson plan • Textbook. • Chart.
	2.4 Undertake routine care and maintenance of tools and equipment in use and tidying up station.	<ul style="list-style-type: none"> • Guide and direct students to carry out care and maintenance of equipment on a routine basis. 	<ul style="list-style-type: none"> • Broom • Solvent • Brush • Water • Dustbin.
13	EXAMINATIONS PRACTICAL= 70% THEORY = 30%		

Decorative Finishes

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN PAINTING AND DECORATION		
MODULE: DECORATIVE FINISHES	MODULE CODE: CTD 22	CONTACT HOURS: 2hrs Theory. 12hrs Practical
<p>GOAL: This module is designed to produce a master craftsman who is capable of carrying out and supervising various specialised jobs in decorative finishes.</p> <p>General Objectives:</p> <p>On the completion of this module, the trainee should be able to:</p> <ol style="list-style-type: none">1. Accomplish decorative painting project involving graining2. Accomplish decorative painting project involving marbling3. Accomplish decorative painting project involving gliding.4. Accomplish decorative painting project involving texture effects5. Erect and dismantle suspended and buildup scaffolds6. Carry out relief wall hanging jobs involving heavy embossed, paper backed, fabric backed and plastic coated materials7. Execute a given project in spray painting		

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN PAINTING AND DECORATING

Module: DECORATIVE FINISHES	Module Code: CPD 22	Contact Hours: 2hrs Theory, 12hrs Practical/wk
------------------------------------	----------------------------	---

Module Specification: THEORETICAL CONTENT

General Objective 1.0: Be Able To Accomplish Decorative Projection Graining

Week	Specific Learning Objective:	Teacher Activities	Learning Resources
1 - 3	1.1 Identify the graining tools and describe their uses, e.g. (a) graining brushes. (b) painters knives. (c) hammers, etc.	• Explain the functions of the various tools used in graining work	• Samples of tools, * *Chalk board, Lesson notes, etc.
	1.2 Identify graining materials e.g. pigments, stainers, oils, solvents, driers, etc	- do -	• Graining colour.
	1.3 Describe the physical properties and uses of graining materials listed in 1.2 above.	- do -	• Specimen of graining colour.
	1.4 Calculate area of work to be grained in a given project..	- do -	
	1.5 Determine the quantity of materials to be carried out in a given graining project.	• Discuss and provide exercise on the application of protective coatings.	
	1.5 Estimate the time and cost for completing a given graining project taking into consideration: i. type of surface being imitated ii. job quantity iii. job position	• Instruct the students on importance of screening as it applies to wet grained job.	• Chalkboard

General Objective 2.0: Be Able To Accomplish Marbling Job

Week	Specific Learning Objective:	Teacher Activities	Learning Resources
	2.1 Identify the marbling tools and state their uses	• Explain the use of each tool in marbling.	• Chalk board, Lesson note • Posters
	2.2 Identify marbling materials e.g. pigments, stainers, etc.	• Identify marbling materials and explain their application and properties.	• Marbling tools and materials.
	2.3 Describe the physical properties of marbling materials	-do -	

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN PAINTING AND DECORATING			
Module: DECORATIVE FINISHES		Module Code: CPD 22	Contact Hours: 2hrs Theory, 12hrs Practical/wk
Module Specification: THEORETICAL CONTENT			
General Objective 2.0: Be Able To Accomplish Marbling Job			
Week	Specific Learning Objective:	Teacher Activities	Learning Resources
	2.4 Calculate a given area to be marbled.	• Solve some calculations on surface area relating to marbling work.	- do -
	2.5 Determine the quantity of materials required for a given marbling project.	- do -	
4-5	<p>2.6 Estimate the time required to accomplish a given marbling project</p> <p>a. Produce a given surface to imitate the following white marble,</p> <p>b. sienna marble (iii) black and gold (iv) graniting.</p> <p>c. Select marbling effect you will like to produce.</p> <p>d. Make a cutting list of tools and material.</p> <p>e. Prepare the given surface to receive a ground coat, bearing in mind the type of surface to be worked upon.</p> <p>f. Prepare the marbling colour considering the nature of marbling</p> <p>g. work to be produce.</p> <p>h. Apply protective coating to the finished marbled job.</p> <p>i. Screen the finished job to avoid damage.</p>	<p>Teacher should demonstrate the practical procedure on sequence of operation in marbling job.</p> <p>• Give practical exercise to students and guide them.</p> <p>- do -</p> <p>- do -</p>	<ul style="list-style-type: none"> • Substrate • Marbling brushes assorted • Knives assorted • Hammer, pincers • Pigment, stainers, oil, solvents. • Varnish.

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN PAINTING AND DECORATING			
Module: DECORATIVE FINISHES		Module Code: CPD 22	Contact Hours: 2hrs Theory, 12hrs Practical/wk
Module Specification: THEORETICAL CONTENT			
General Objective 3.0: Accomplish Decorative Painting Project Involving Gilding.			
Week	Specific Learning Objective:	Teacher Activities	Learning Resources
6-7	3.1 Prepare a given surface to be gilded taking into consideration the physical and chemical properties of the surface to be gilded e.g. a. Metal (ferrous, non-ferrous) b. Wood (soft, hard, etc).	• Provide exercises to students and guide them to achieving result.	• Specimen of gilded surface.
	3.2 Prepare the ground colour for a gilding job taking into consideration the characteristics of the ground to be gilded e.g.- smoothness; thickness, etc.	- do -	• Specimen of ground colour.
	3.3 Prepare the mordant (isin-glass) taking into consideration the quality (fineness and strength of the mordant).	• Give exercises on the preparation of mordant.	• Prepared specimen.
	3.4 Produce a given gilding job with transfer gold leaf or loose gold leaf using the appropriate mordants in 3.9 above. Note: Mordants should be applied to the area to be gilded only. The gold leaf (transfer gold leaf) should be applied to the mordant when it is still tacky.	• Give exercise to students and provide proper guide and supervision	• Specimen of finished job displayed.
General Objective 4.0: Accomplish Decorative Painting Project Involving Texture Effect.			
Week	Specific Learning Objective:	Teacher Activities	Learning Resources
8 - 9	4.1 Prepare working drawing for relief texture work.	- do -	
	4.2 Prepare ground for relief texture work, Example of ground include: a. plaster; b. Wood; c. metal.	• Initiate practical exercise and guide students on the job.	

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN PAINTING AND DECORATING			
Module: DECORATIVE FINISHES		Module Code: CPD 22	Contact Hours: 2hrs Theory, 12hrs Practical/wk
Module Specification: THEORETICAL CONTENT			
General Objective 4.0: Accomplish Decorative Painting Project Involving Texture Effect.			
Week	Specific Learning Objective:	Teacher Activities	Learning Resources
	4.3 Prepare the materials for relief texture work. Example of materials include: a. plastic paint; b. plasters; c. Polychromatic paints, etc.	• Discuss and arrange relief material with the students.	
	4.4 Place the working drawing on the substrate.	• Exercise on placement of working drawing.	• Tools and equipment
	4.5 Transfer the working drawing on the substrate.		
	4.6 Mark-out the work;	• Engage students on marking-out exercise.	
General Objective 6.0: Carry Out Relief Wall Hanging Involving Embossed, Paper Backed, Fabric Backed And Plastic Coated Materials.			
Week	Specific Learning Objective:	Teacher Activities	Learning Resources
10	6.1 Prepare the surface for relief wall hanging taking into consideration various types of surface characteristics. e.g. a. Previously painted surface; b. defected surfaces, etc.	• Provide practical exercise and guide students.	• Sample of a such activities.
	6.2 Select materials for relief wall hanging e.g. paper, wood, leather, etc. Choosing appropriate adhesive for the selected materials to be hung.	• Discuss and explain each procedure.	• Pictures, charts and specimen. • Lesson plan
	6.3 Trim cut up materials required for relief wall hanging job.	• Give practical exercise and assist students.	• Chart and pictures.
	6.4 Paste the materials to be hung.	• Give exercise on pasting of wall papers.	• Picture and charts.
	6.5 Fold material as appropriate to ensure ease of handling during hanging.	• Give practical exercise and assist students.	• Charts.

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN PAINTING AND DECORATING			
Module: DECORATIVE FINISHES		Module Code: CPD 22	Contact Hours: 2hrs Theory, 12hrs Practical/wk
Module Specification: THEORETICAL CONTENT			
General Objective 6.0: Carry Out Relief Wall Hanging Involving Embossed, Paper Backed, Fabric Backed And Plastic Coated Materials.			
Week	Specific Learning Objective:	Teacher Activities	Learning Resources
	6.6 Hang relief material with the correct technique.	- do -	• Pictures and charts.
	6.7 Dispose of surplus and waste materials.	• Assign students and direct them appropriately.	• Cleaning equipment.
	6.8 Clean tools and equipments and store as appropriate.	• Demonstrate and assign students to do same.	• Chart. • Cleaning solvent • Rags.
General Objective 7.0: Execute A Given Project In Spray Painting.			
Week	Specific Learning Objective:	Teacher Activities	Learning Resources
11 - 12	7.1 Select the following equipment for car and wood refinishing e.g. i. high pressure equipment ii. air volume spray equipment.	• Discuss and explain each of the equipment expose the students to each of the equipment.	• Specimen of the equipment made available.
	7.2 Prepare the surface for spraying e.g. car or wood structure.	• Give practical exercise on surface preparation and guide the student to achieve result.	• Vehicle body and wooden surface.
	7.3 Mask the prepared surface.	• Give the students exercise on masking.	• Specimen of a well masked job.
	7.4 Prepare materials for spraying e.g. a. Acrylic paint; b. Cellulose paint; c. Metallic paint		• All the various materials needed.
	7.5 Prepare the equipment for the application of spray.	• Show the equipment to the students and explain its working principles.	• Equipment
13	Examination: Practical = 70% Theory = 30%		

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN PAINTING AND DECORATION

MODULE: DECORATIVE FINISHES	MODULE CODE: CPD 22	CONTACT HOUR: 2hrs Theory, 12hrs Practical/wk
------------------------------------	----------------------------	--

Module Specification: Practical Content

General Objective: 1.0 Accomplish Decorative Projection

Week	Specific Learning Outcome	Teacher Activities	Learning Resources
1-3	1.1 Prepare a given surface for graining taking into consideration the physical and chemical properties of the surface to be grained, e.g. metal (ferrous and non ferrous) - wood (soft and hard) etc.	• Give graining exercise to students to perform and supervise/guide them	• Sample of grained work
	1.2 Prepare the ground colour for a given graining job taking into consideration the characteristics of the ground colour for the graining job. The characteristics include hardness, smoothness, eggshell, (semi-gloss finish, etc.)	- do -	• Display a specimen of ground colour
	1.3 Prepare the graining colour for a given graining job taking into consideration the characteristics of the graining colour e.g. nearness, to ground colour, glaze, (transparent and semi-transparent) drying effect, etc	- do -	• Display a specimen of graining colour
	1.4 Products given graining jobs to imitate various grain patterns e.g. oak, mahogany, rose wood, walnut, etc. NOTE: Appropriate tools and techniques should be used in accordance with safety regulations	- do -	• Specimen of various grain patterns
	1.5 Apply protective coating (vanish) to a finished graining job	• Discuss and provide exercise on the application of protective coatings	• Specimen of protective coatings
	1.6 Screen wet job to prevent damage	• Instruct the students on importance of screening as it applies to wet grained job.	• Chalkboard illustration

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN PAINTING AND DECORATION			
MODULE: DECORATIVE FINISHES		MODULE CODE: CPD 22	CONTACT HOUR: 2hrs Theory, 12hrs Practical/wk
Module Specification: Practical Content			
General Objective: 1.0 Accomplish Decorative Projection			
Week	Specific Learning Outcome	Teacher Activities	Learning Resources
4-5	1.7 Prepare a given surface for marbling taking into consideration the physical and chemical properties of the surface to be marbled; e.g. i. metal (ferrous, non-ferrous) ii. wood (soft, hard etc.)	• Give students exercise and guide them to achieve result	• Specimen of marbled job displayed
	1.8 Prepare the ground colour for a given marbled job taking into consideration the characteristics of the ground coat for the marbling job. The characteristics include hardness, eggshell, (semi-gloss finish), etc	- do -	• Specimen of ground colour displayed
	1.9 Prepare the marbling colour for a given marbling job taking into consideration the characteristics of the marbling colour e.g. a. nearness to ground colour b. glaze c. scumble (transparent and semi-transparent drying effect, etc.)	- do -	• Display specimen of marbled colour work.
	1.10 Produce a given surface to imitate the following: a. white marble b. sienna marble c. black and gold d graining etc. Note: Appropriate tools and techniques should be used and the safety practices involved should be observed.	- do -	• Specimen of various marble imitation
	1.11 Apply protective coating (various) to a finished marbling job	- do -	2 Specimen of protective coatings
	1.12 Screen wet job to prevent damage	- do -	• Chalkboard illustration
	1.13 Undertake routine care of tools in use	• Involve students in routine care and maintenance of tools	• Chalkboard

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN PAINTING AND DECORATION			
MODULE: DECORATIVE FINISHES		MODULE CODE: CPD 22	CONTACT HOUR: 2hrs Theory, 12hrs Practical/wk
Module Specification: Practical Content			
General Objective 2.0: Accomplish Decorative Painting Project Involving Gilding			
Week	Specific Learning Outcome	Teacher Activities	Learning Resources
6-7	2.1 Prepare a given surface to be gilded taking into consideration the physical and chemical properties of the surface to be gilded e.g. metal (ferrous, non-ferrous; wood (soft, hard etc.)	• Provide exercises to students and guide them to achieving result	• Specimen of gilded surface
	2.2 Prepare the ground colour for a gilding job taking into consideration the characteristics of the ground to be gilded e.g. smoothness; thickness, etc.	- do -	• Specimen of ground colour
	2.3 Prepare the mordant (isin-glass) taking into consideration the quality (fineness and strength of the mordant	• Give exercises on the preparation of mordant of mordant	• Prepared specimen
	2.4 Produce a given gilding job with transfer gold leaf or loose gold leaf using the appropriate mordants in 3.9 above Note: Mordants should be applied to the area to be gilded only. The gold leaf (transfer gold leaf) should be applied to the mordant when it is still tacky.	• Give exercise to student and give them proper guide	• Specimen of finished job displayed
General Objective 3.0: Accomplish Decorative Painting Project Involving Texture Effect			
Week	Specific Learning Outcome	Teacher Activities	Learning Resources
8-9	3.1 Prepare working drawing for relief texture work	- do -	
	3.2 Prepare ground for relief texture work, e.g. of ground include - Plaster, Wood, Metal.	• Initiate practical exercise and guide students on the job	
	a. Prepare the materials for relief texture work, e.g. of materials include: b. plastic paint c. plasters d. polychromatic paints etc. e. Place the working drawing on the substrate f. Transfer the working drawing on the substrate g. Mark-out the work	• Discuss and arrange relief material with the students - do - - do - • Engage students on marking-out exercise	

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN PAINTING AND DECORATION			
MODULE: DECORATIVE FINISHES		MODULE CODE: CPD 22	CONTACT HOUR: 2hrs Theory, 12hrs Practical/wk
Module Specification: Practical Content			
General Objective 4.0: Carry out relief wall hanging involving embossed, paper backed, fabric backed and plastic coated materials			
Week	Specific Learning Outcome	Teacher Activities	Learning Resources
10	4.1 Prepare the surface for relief wall hanging taking into consideration various types of surface characteristics e.g. a. previously painted surface b. defected surfaces etc.	• Provide practical exercise and guide students	• Sample of a such activities
	4.2 Select materials for relief wall hanging e.g. 4.3 Paper, wood, leather, etc. Choosing appropriate adhesive for the selected materials to be hung	• Discuss and explain procedure.	• Pictures, charts and specimen
	4.4 Trim cut up materials required for relief wall hanging job	• Give practical exercise and assist students	• Chart and pictures
	4.5 Paste the materials to be hung	• Give exercise on pasting of wall papers	• Picture and charts
	4.6 Fold material as appropriate to ensure ease of handling during hanging	• Give practical exercise and assist students	• Charts displayed
	4.7 Hang relief material with the correct technique	• - do-	• Picture and Charts
	4.8 Dispose of surplus and waste materials	• Assign students and direct them appropriately	• Site work • Cleaning equipment
	4.9 Clean tools and equipments and store as appropriate	• Demonstrate and assign students to do same	• Chart • Cleaning solvent • Rags

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN PAINTING AND DECORATION			
MODULE: DECORATIVE FINISHES		MODULE CODE: CPD 22	CONTACT HOUR: 2hrs Theory, 12hrs Practical/wk
Module Specification: Practical Content			
General Objective 5.0: Execute A Given Project In Spray Painting			
Week	Specific Learning Outcome	Teacher Activities	Learning Resources
11-12	5.0 Select the following equipment for car and wood refinishing e.g. 5.1 High pressure equipment 5.2 Air volume spray equipment	<ul style="list-style-type: none"> • Discuss and explain each of the equipment • Expose the students to each of the equipment 	<ul style="list-style-type: none"> • Specimen of the equipment made available
	5.3 Prepare the surface for spraying e.g. car or wood structure	<ul style="list-style-type: none"> • Give practical exercise on surface • Preparation and guide them to achieve result 	<ul style="list-style-type: none"> • Vehicle body and wooden surface
	5.4 Mask the prepared surface	<ul style="list-style-type: none"> • Give the students exercise on masking 	<ul style="list-style-type: none"> • Specimen of a well masked job
	5.5 Prepare materials for spraying e.g. a. Acrylic paint b. Cellulose paint c. Metallic paint	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • All the various materials needed
	5.6 Prepare the equipment for the application of spray	<ul style="list-style-type: none"> • Show the equipment to the students and explain its working principles 	<ul style="list-style-type: none"> • Equipment
	5.7 Spray material to the prepared surface to give desired effect	<ul style="list-style-type: none"> • Carry out actual spraying exercise 	<ul style="list-style-type: none"> • Sample of finished work. • Pictures
13	Examination: Practical =70% Theory=30%		

Advanced Spray Painting

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN PAINTING AND DECORATION

MODULE: ADVANCED SPRAY PAINTING

MODULE CODE: CTD 23

CONTACT HOURS: 8hrs./WK

GOAL: This module is designed to further equip the trainee with the knowledge and skill to perform complex spray painting work

General Objectives:

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

Understand the nature and techniques of preparing vessels/tanks for spray painting

Prepare surface of new metal ready for spray painting

PROGRAMME: ADVANCED NATIONAL TECHNICAL CERTIFICATE IN PAINTING AND DECORATING			
Module: ADVANCED SPRAY PAINTING		Module Code: CPD 23	Contact Hours: 2hrs Theory, 6 Hrs Practical/Wk
Module Specification: THEORETICAL/PRACTICAL CONTENT			
General Objective 1.0: Understand The Nature And Techniques Of Preparing Vessels/Tanks For Spray Painting.			
Week	Specific Learning outcome	Teacher Activities	Learning resources
1 - 5	1.1 Prepare tanks/vessel for spray application by appropriate methods e.g. sandblasting, sand sweeping, chipping scrapping, etc.	• Take the students to see a vessel/or tank in a repair ship yard.	• Audio/video • Film strip
	1.2 Mask up job prior to spray painting using masking paper, etc.	- do -	- do -
	1.3 Prepare adequate scaffoldings or crane with basket.	• Take the students to the site to see scaffold materials	- do -
	1.4 Prepare a report giving approval for the spray painting confirming all other jobs have been done.	• Show a typical approved report and ask them to prepare similar one.	• An industrial visit to an oil servicing company/ship repair yard.
6-12	Surface Preparation of a new Metal		
	Select Project	• Guide the students to perform given project on surface preparation of new and old metal	• Materials, Tools, Work
	Dust off debris	• Assess students	
	Select materials		
	Scrape down surface		
	Chip necessary spots		
	Wire brush the surface/sandblasting Vigorously		
	Apply primer immediately (same day)		
	Apply second coat of primer to bolts		
	Apply second coat of primer to bolts rivet heads and sharp edges		
END OF ANTC Examination: Practical= 70% Theory =30%			