

**NATIONAL BOARD FOR TECHNICAL
EDUCATION
KADUNA**

NATIONAL DIPLOMA

IN

ESTATE MANAGEMENT

*CURRICULUM AND COURSE
SPECIFICATIONS*

Plot B, BSDA Road, P.M.B. 2239 KADUNA, NIGERIA

GENERAL INFORMATION

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NATIONAL DIPLOMA IN ESTATE MANAGEMENT

Land impinges upon almost every facets of contemporary society. With this awareness, dire need for land conservation and good husbandry cannot be over-emphasized.

The programme is aimed at producing sub-professional who will be capable of handling and performing to an acceptable standard certain range of Estate development and management functions and solving problems in their various fields of employment with some supervision.

General Objectives

At the end of the programme, the diplomats, should be able to exhibit adequate knowledge, skills and technical know-how in the use, development and management of land on the following:-

- Inspect, survey and report on land and building for development and management purposes;
- Examine, produce and interpret building plans;
- Undertake the preparation, keeping and updating of land records.

Admission Requirements of the Programme

Candidates who desire to be admitted into the programme should possess:-

- (a) Four GCE 'O' Levels or WASC or SSSC with credit passes in relevant subjects to the programme, i.e., Mathematics and English Language, a basic Science and any other subject from Geography, Economics, Physics, Biology Chemistry, Technical Drawing, Art, Woodwork, Literature, Metalwork, Accounting, Basic Surveying, etc.
- (b) Four credit passes in relevant subjects obtained at the final examination of an NBTE recognized Pre-liminary – ND programme offered in the Polytechnics or similar Post-secondary Technical Institution on a foundation of four passes relevant to the programme.

PROGRAMME STRUCTURE

First Session

The ND in Estate Management is a two-year programme of four semesters, each of 15 weeks duration. A minimum of 4 months Supervised Industrial Work Experience Scheme (SIWES) is required at the end of the first year of ND I.

Second Session

Third Semester: In College

Fourth Semester: In College

Graduation.

EVALUATION OF THE STUDENTS FOR THE AWARD

Conditions of the award of diplomas should be based on the following:-

- i) Satisfactory performance evaluation of all prescribed coursework which may include class work, tests, quizzes, workshop practice, laboratory work;
- ii) Supervised Industrial Work Experience for four months (ND only);
- iii) Satisfactory performance at all semester examinations;
- iv) Satisfactory completion of final year project work.

Normally, continuous assessment contributes 30%, industrial training 5%, project work 5% while semester examinations are weighed 60% to make a total of 100%.

Diploma should be awarded in four classes for both ND and HND levels of the programme:-

- | | | | |
|-----|--------------|---|-----------------------|
| i) | Distinction | - | GPA of 3.50 and above |
| ii) | Upper Credit | - | GPA of 3.00 – 3.49 |

- | | | | |
|-----|--------------|---|--------------------|
| ii) | Lower Credit | - | GPA of 2.50 – 2.99 |
| iv) | Pass | - | GPA of 2.00 – 2.49 |

FINAL YEAR PROJECT

Final year students of ND and HND levels of the programme are expected to carry out a project work which could be on individual basis or group work. The project should as much as possible be something that can be put to use or marketable. Project reports should be well presented and properly supervised. The departments should make their own arrangement of schedules for project work.

HIGHER NATIONAL DIPLOMA PROGRAMME

INTRODUCTION

Land use studies are concerned with the complex interwoven pattern of the relationship between man and land. The programme is aimed at providing adequate understanding and skills for the management of the whole physical environment, including the economic, the financial, the constructional, legal, social and political aspects as well as examining the techniques both quantitative and qualitative tools used in the practice of Estate Management.

General Objectives:-

At the end of the HND programme in Estate Management the diplomats should be able to:-

1. Take measurement of land and buildings.
2. Carry out market surveys and other enquiries on properties.
3. Collect, compile and compute data for valuation purposes.
4. Survey, inspect and report on locational and structural conditions for properties for management, maintenance, repairs and valuation purposes.
5. Inspect state lands and make regular reports.

6. Manage properties for landlord in relation to selection of tenants, service and notices to quit premises, renewal of lease and maintenance of buildings etc.
7. Examine building plans.
8. Assist on the implementation of policies regarding allocation and administration of land resources.
9. Assist in the processing of application for right of occupancy and subsequent transactions.
10. Assist in the registration of title document i.e. C of O, Deeds of Mortgage. Deed of Assignment and subleases.
11. Assist with the public government notices to compulsorily acquire rights of occupancy.
12. Carryout routine control, supervision and occupation of government land and collection of rent and licence fees.
13. Assist in keeping Estate Accounts for clients.

Higher National Diploma (HND) Programme

The general entry requirements for the HND Programme include:-

- (a) all the requirements for admission into the ND programme as state above;
- (b) a minimum of lower credit pass (CGPA of 2.00 – 2.49) in the ND examination that had two or more years of cognate experience in the specific field may be considered for admission into the HND programme.
- (c) a minimum of one year cognate work experience.

In exceptional cases, ND diplomats with a pass (CGPA of 2.00 – 2.49) in the ND examination that had two or more years of cognate experience in the specific field may be considered for admission into the HND programme.

Curriculum Table

The curriculum of all ND and HND programme consists of four main components. These are:-

- i) General Studies/Education
- ii) Foundation Courses
- iii) Professional Courses
- iv) Supervised Industrial Work Experience Scheme (SIWES)

The General Education component shall include courses in: the curriculum table is as highlighted below:

Arts and Humanities – English Language, communication, History, These are compulsory.

Mathematics and Science (for non-science based programmes).

Social Studies – Citizenship – Citizenship (the Nigerian constitution) Political Science, Sociology, Philosophy, Geography, Entrepreneurship Studies.

The courses in Citizenship, Entrepreneurship, Philosophy of science and Sociology are compulsory.

Physical and Health Education (one semester credit only).

The General Education component shall account for not more than 15% of total contact hours for the programme.

Foundation Courses include courses in economics, Mathematics, Pure Sciences, Technical Drawing, Descriptive Geometry, Statistics, etc. The number of hours will vary with the programme and may account for about 10-15% of the total contact hours.

Professional Courses are courses, which give the student the theory, and practical skills he needs to practice his field of calling at the technician/technologist level. These may account for between 60-70% of the contact hours depending on programme.

Supervised Industrial Work Experience Scheme (SIWES) shall be taken during the long vacation following the ends of the second semester of the first year. This will attract 4 credit unit. See details of SIWES at paragraph 8.0.

Curriculum Structure

ND Programme

The structure of the NFD programme consists of four semesters of classroom, laboratory and workshop activities in the college – and a semester (3-4 months) of supervised industrial work experience scheme (SIWES) > Each semester shall be of 17 weeks duration made up as follows:

15 contact weeks of teaching, i.e. recitation, practical exercises, quizzes, test etc:
and 2 weeks for examinations and registration.

SIWES shall take place at the end of the second semester of the first year (4 credit units).

Curriculum Structure

HND Programme

The structure of the programme is similar to that of the ND save that the SIWES at the end of the first year is not compulsory.

Accreditation

Each programme offered either at the ND level shall be accredited by the NBTE before the diplomas can be awarded either of the two diploma certificates. Details about the process of accrediting a programme for the award of the ND or HND are available from the Executive Secretary, Programmes Division, National Board for Technical Education, Plot B, Bida Road, P.M.B. 2239, Kaduna, Nigeria.

Conditions for the award of the ND/HND

Institutions offering accredited programmes will award the National Diploma to candidates who successfully completed the programme after passing prescribed coursework examinations, diploma project and the supervised industrial work experience. Such candidates should have completed a minimum of between 72 and 80 semester credit units depending on the programme.

Guidance Notes for Teachers Teaching the Programme

The new curriculum is drawn in unit courses. This is in keeping with the provisions of the National Policy on Education which stress the need to introduced the semester credit units which will enable a student who so wish to transfer the unit already completed in an institution of similar standard from which he is transferring in designing the units, the principle of the modular system by product has been adopted; thus making each of the professional modules, when completed provides the student with technician operative skills, which can be used for employment purposes.

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 behavioural objectives, so that it is clear to all the expected performance of the student who successfully completed some of the courses of the diplomats of the programme. There is a slight departure in the presentation of the performance based curriculum which requires the conditions under which the performance are expected to be carried out and the criterial 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 institution under which the performance can taken place and to follow that with the criteria for determining an acceptable level of performance. Departmental submission on the final curriculum may be vetted by the Academic Board of the institution.

Our 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 systems.

The teaching of the theory and practical work should, 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 55:50 or 60:40 or the reverse.

GUIDELINES ON SIWES PROGRAMME

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

Responsibility for Placement of Students

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 which shall, in turn,

authenticate the list and forward it to the Industrial Training fund, Jos. 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 attached. It may be wise to adopt the one already approved for each field.
- ii) The industry-based supervisor of the students during the period, likewise 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.

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) Technician competence as a potential technician in his field.
- g) SIWES will attract 4.00 credit unit after complement of the scheme

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.

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 students having any problems regarding the specific assignments given to them by their industry-based supervisor.

Frequency of Visit

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

- 1) There is another visit six weeks after the first visits; and 2
- 2) A final visit in the last month of the attachment.

Stipend for Students in 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 the NBTE.

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 pas basis. Where a student has satisfied all other requirements but failed SIWES, he may only be allowed to repeat another four months SIWES as his own expense.

National Board for Technical Education,
Kaduna.
29th October, 2004

CURRICULUM TABLE

PROGRAMME: NATIONAL DIPLOMA IN ESTATE MANAGEMENT

YEAR OF STUDY: YEAR ONE

FIRST SEMESTER

COURSE CODE	COURSE TITLE	L	T	P	CU	CH	PRE-REQUISITE
GNS 101	Use of English I	2	-	-	2	2	SSCE/GCE/NECON/TABTEB
GNS 111	Citizenship Education	2	-	-	2	2	“
MTH 111	Mathematics	2	-	-	2	2	“
EST 111	Introduction to Estate Management	2	-	-	2	2	“
EST 112	Introduction to Accounting	2	-	3	2	5	“
EST 113	Nigerian Legal systems	2	-	-	2	2	“
ARC 101	Technical Drawing	1	-	3	2	4	“
SUG 101	Principles in Surveying I	1	-	3	2	4	“
PHE	Physical and Health Education	-	-	3	1	3	“
	TOTAL	14	-	12	18	26	

CURRICULUM TABLE

PROGRAMME: NATIONAL DIPLOMA IN ESTATE MANAGEMENT

YEAR OF STUDY: YEAR TWO

SECOND SEMESTER

COURSE CODE	COURSE TITLE	L	T	P	CU	CH	PRE-REQUISITE
GNS 125	Economics	2	-	-	2	2	SSCE/GCE/NECON/TABTEB
GNS 102	Communication in English I	2	-	-	2	2	GNS 101
GNS 121	Introduction to Sociology	2	-	-	2	2	-
MTH 112	Mathematics	2	1	-	3	3	MTH 111
EST 122	Principles of Accounting	2	1	-	3	3	EST 112
EST 123	Law of Contract and Torts	2	-	-	2	2	EST 113
EST 124	Introduction to Valuation	2	1	-	3	3	EST 111
SUG 102	Principles in Surveying II	1	-	3	2	4	SUG 101
EST 102	Estate Graphics	1	-	2	2	2	-
	TOTAL	16	3	3	21	24	

CURRICULUM TABLE**PROGRAMME: NATIONAL DIPLOMA IN ESTATE MANAGEMENT****YEAR OF STUDY: YEAR TWO****FIRST SEMESTER**

COURSE CODE	COURSE TITLE	L	T	P	CU	CH	PRE-REQUISITE
GNS 201	Use of English	2	-	-	2	2	GNS 101 & 102
STA 111	Introduction to Statistics	2	1	-	3	3	-
URP 117	Urban and Regional Planning Principles and Techniques	1	-	2	2	3	-
BLD 101	Building Construction I	2	-	1	3	3	-
EST 211	Principles of Valuation I	2	1	-	3	3	EST 124
EST 212	Land Law I	2	-	-	2	2	-
EST 213	Introduction to Property Development	2	-	-	2	2	-
EST 214	Rural Land Use Economics	2	-	-	2	2	-
EST 215	Property Taxation	2	-	-	2	2	-
	TOTAL	17	2	3	21	22	

CURRICULUM TABLE**PROGRAMME: NATIONAL DIPLOMA IN ESTATE MANAGEMENT****YEAR OF STUDY: YEAR ONE****FIRST SEMESTER**

COURSE CODE	COURSE TITLE	L	T	P	CU	CH	PRE-REQUISITE
GNS 202	Communication in English II	2	-	-	2	2	GNS 210
BLD 102	Building Construction II	2	-	1	3	3	BLD 105
EST 221	Principles of Valuation II	2	1	-	3	3	211
EST 222	Land Law II	2	-	-	2	2	EST 212
EST 223	Introduction to Property Management	2	-	-	2	2	-
EST 224	Urban Land Use Economics	2	-	-	2	2	EST 214
EST 225	Principles of Property Rating	2	-	-	2	23	EST 215
EST 226	Building services and Maintenance	2	-	1	3	3	-
EST 227	Introduction to Computer	1	-	2	2	3	-
EST 228	Final Project	1	-	4	2	5	-
	TOTAL	18	1	8	23	27	

GENERAL STUDIES COURSES

NATIONAL BOARD FOR TECHNICAL EDUCATION, KADUNA

PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: USE OF ENGLISH I (GRAMMAR)		Course Code: GNS 101	Contact Hours: 2-0-0
THEORETICAL CONTENT			
WEEK	General Objective 1.0: It will promote the necessary language skills, which will enable student to cope effectively.		
	Specific Learning Outcome	Teacher Activities	Resources
1 – 3	1.1 Explain the necessity for acquiring good note-taking/making techniques. 1.2 List the methods of note-taking/making. 1.3 Explain the use of dictionary. 1.4 Explain the use of the library. 1.5 Explain the type of information sources in the library. 1.6 Identify good reading habits. 1.7 Explain the different methods of reading viz scan, skim, normal and study. 1.8 Use the different methods of reading as in 1.7 above.	Ask the students: <ul style="list-style-type: none"> ▪ the techniques of note-taking/making and list the various methods. ▪ the correct ways of using the dictionary. ▪ the best ways of using the library ▪ to list the various information sources in the library and how to locate these information sources. ▪ the different methods of reading and the difference between the methods. 	Chalkboard, Recommended textbooks.
	General Objectives 2.0: Understand the basic roles of grammar, know the nature of the language, appreciate literary words in English		
4 - 6	2.1 Explain the concept of language. 2.2 List the characteristics of language. 2.3 Explain the four language skills, viz: speaking, listening, writing, readings. 2.4 Explain the functions of language. 2.5 List the uses of English Language in Nigeria, e.g. as the language of research, government, commerce etc.	Ask the students: <ul style="list-style-type: none"> ▪ the basic concept of language. ▪ to mention the characteristics of language. ▪ to identify the functions of language. ▪ To list the uses of English Language in Nigeria. 	Chalk, Blackboard, Chalkboard.
	General Objectives 3.0: Understand the basic rules of grammar.		
7 - 10	3.1 Explain grammar. 3.2 Explain parts of speech. 3.3 Analyze the use of parts of speech in sentences	Ask the students: <ul style="list-style-type: none"> ▪ questions on parts of speech and how to apply them in a sentence construction. 	Chalkboard and Chalk

	<p>correct common errors in the use of parts of speech in sentences.</p> <p>3.4 Explain how to construct sentences with correct.</p> <p>3.5 Syntactic arrangement.</p> <p>3.6 List punctuation marks.</p> <p>3.7 Enumerate the uses of punctuation marks and explain how to punctuate a given passage.</p> <p>3.8 Explain idioms, figures of speech and affrication.</p>	<ul style="list-style-type: none"> ▪ to identify common errors in the use of parts of speech in sentences. ▪ to construct sentences with correct syntactic arrangement. ▪ to identify punctuation marks and their uses, and how to punctuate a given passage. ▪ to construct sentences to illustrate idioms, figure of speech and affixes. 	Chalk, Chalkboard
General Objective 4.0: Understanding the essential qualities of paragraph.			
11-13	<p>4.1 Define a paragraph.</p> <p>4.2 Name the parts of a paragraph viz: topic, sentence, development and conclusion/ transition.</p> <p>4.3 Explain the thematic qualities of a paragraph viz, unity, coherence and emphasis.</p> <p>4.4 Explain methods of paragraph development viz, example, definition, comparison and contrast etc.</p> <p>4.5 Explain method of ordering details in a paragraph viz, less complex to more complex and vice versa, spatial, chronological etc.</p> <p>4.6 Write specific paragraphs to illustrate 4.2 to 4.5 above.</p>	<p>Ask the students:</p> <ul style="list-style-type: none"> ▪ to define a paragraph and to name the part of a paragraph. ▪ what the understand by the thematic qualities of a paragraph. ▪ to explain the various method of paragraph development and the methods of ordering details in a paragraph. <p>Assess the students.</p>	Chalkboard
General Objectives 5.0: Appreciating Literary works in English			
14-15	<p>5.1 Give the meaning of literature.</p> <p>5.2 Trace the development of literature.</p> <p>5.3 Differentiate between the literary genres.</p> <p>5.4 Explain the functions of literature.</p> <p>5.5 Explain the terminology of prose fiction, e.g. plot setting, characterization etc.</p> <p>5.6 Answer an essay question on a given novel.</p>	<p>Ask the students</p> <ul style="list-style-type: none"> ▪ the meaning of literature and the development of literature. ▪ The functions of literature and the terminology of prose fiction. 	Chalk, Chalkboard

ASSESSMENT: The continuous assessment, tests and quizzes will be awarded 40% of the total score. The end of the Semester Examination will make up for the remaining 60% of the total score.

NATIONAL BOARD FOR TECHNICAL EDUCATION, KADUNA

PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: COMMUNICATION IN ENGLISH I		Course Code: GNS 102	Contact Hours: 2-0-0
THEORETICAL CONTENT			
WEEK	General Objective 1.0: Acquire the necessary communication skills, techniques of correspondence and comprehend within materials.		
	Specific Learning Outcome	Teacher Activities	Resources
1 – 4	COMMUNICATION 1.1 Define Communication 1.2 Analyze the process of Communication. 1.3 Analyze the purposes of Communication. 1.4 Explain the relationship between communication and language. 1.5 Explain the impact of interference on communication at various levels e.g. Phonological, syntactic, e.t.c. 1.6 Explain code-mixing, code-switching and dissonance in communication.	<ul style="list-style-type: none"> Teachers are expected to involve the students in Communication Skills, and Speed intonation. 	Chalkboard, Textbooks, Samples of Formal and Informal Letters.
5 - 8	ORAL PRESENTATION 2.1 Label a diagram of the organs of speech. 2.2 Describe the functions of the organs in 2.1 above in speech production. 2.3 List the phonemes of English. 2.4 Produce correctly each of the phonemes listed in 2.3 above. 2.5 Pronounce correctly by making distinctions between the different sound contrasts in the consonantal and vowel systems of English. 2.6 Explain the principles of effective speaking, viz; correct use of stress, rhythm, and	<ul style="list-style-type: none"> Teachers are expected to ask students to do graded exercises. 	Books on Oral English.

	information patterns. 2.7 Read fluently.		
9 –11	<p>CORRESPONDENCE</p> <p>3.1 List the various type of correspondence, e.g. letter, memo, circular, e.t.c.</p> <p>3.2 Explain the various parts of a letter.</p> <p>3.3 Differentiate between formal and informal letter format.</p> <p>3.4 Explain the characteristics of styles for formal and informal letters.</p> <p>3.5 Explain the functions of the first, middle and last paragraphs.</p> <p>3.6 Write a formal and informal letter.</p>	<ul style="list-style-type: none"> ▪ Give students assignments on various type of correspondence. 	<p>Chalkboards, Textbooks, Samples of formal and Informal Letters.</p>

NATIONAL BOARD FOR TECHNICAL EDUCATION, KADUNA

PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: USE OF ENGLISH II		Course Code: GNS 201	Contact Hours: 2-0-0
THEORETICAL CONTENT			
WEEK	General Objective 1.0: Understand the rules of grammar.		
	Specific Learning Outcome	Teacher Activities	Resources
1 – 3	1.1 Define the phrase. 1.2 Explain the different types of phrases, i.e. structural and functional. 1.3 Define the clause. 1.4 Explain the different types of clauses i.e. structural and functional. 1.5 Define the sentence. 1.6 Explain the different types of sentences i.e. structural and function. 1.7 Explain the constitution of different types of sentences.	Ask the students: <ul style="list-style-type: none"> ▪ To identify the different types of phrases. ▪ To define a clause and to identify the different types of clauses to define a sentence and to identify the different types of sentences assess the students on the construction of different types of sentences. 	Chalkboard, Recommended Textbook, Lecture notes, etc.
	General Objective 2.0: Know how to write good essays.		
4 – 5	2.1 List the different types of essays 2.2 Explain the features of each type of essay listed in 2.1 above. 2.3 Generate/gather relevant information on a given topic. 2.4 Draw up a good outline. 2.5 Write a good essay on a given topic.	<ul style="list-style-type: none"> ▪ Ask the students to list the different types of essay and to identify the features of each types of essay list in above. ▪ Assess the students on essay writing. 	Chalkboard Recommended textbooks.
	General Objective 3.0: Understand the difference between denotative and connotative uses of words.		
6 – 8	3.1 Explain the term denotation. 3.2 Identify words used denotatively. 3.3 Explain the term connotation. 3.4 Identify words used connotatively. 3.5 Use words connotatively.	<ul style="list-style-type: none"> ▪ Ask the students to define the terms denotation and connotation and how to identify words used denotatively connotatively. ▪ Assess the students. 	Chalk, blackboard Chalkboard Recommended textbooks, lecture notes etc.

	3.6 Compare denotative and connotative usage in groups of synonyms e.g. women, lady, female, client, customer, patient, fear, terror, dread etc.		
General Objective 4.0: Understand the techniques of comprehension and summary writing.			
9 – 12	<p>4.1 Answer questions on comprehension passage at a higher level of difficulty.</p> <p>4.2 Give contextual explanations to statements from the texts used.</p> <p>4.3 Identify colloquialisms, slangs and jargons.</p> <p>4.4 Explain summary writing.</p> <p>4.5 Distinguish between types of summary writing.</p> <p>4.6 Explain the steps in summary writing.</p> <p>4.7 Write, within a specified length, a goal summary of a given passage.</p>	<ul style="list-style-type: none"> ▪ Ask the students to distinguish the various types of summary writing and the steps in summary writing. ▪ Give the students passage to summarize. ▪ Assess the students. 	Chalkboard Recommended textbooks, lecture notes etc.
General Objective 5.0: Appreciate literature in English.			
13 – 15	<p>5.1 Describe drama.</p> <p>5.2 Explain the types of drama.</p> <p>5.3 Explain the terminology of drama e.g. act, resolution, conflict, denouement etc.</p> <p>5.4 Distinguish between radio drama and television drama.</p> <p>5.5 Answer an essay question on a given drama text.</p>	<p>Ask students:</p> <ul style="list-style-type: none"> ▪ To identify the various types of drama and to explain the terminology of drama to differentiate between radio drama and television drama to answer essay question on a given drama text. ▪ Assess the students. 	Television, video cassette recorder, radio cassette player.

NATIONAL BOARD FOR TECHNICAL EDUCATION, KADUNA

PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: CITIZENSHIP EDUCATION		Course Code: GNS 111	Contact Hours: 2-0-0
THEORETICAL CONTENT			
WEEK	General Objective: 1.0 Understand the Constitution of Nigeria.		
	Specific Learning Outcome	Teacher Activities	Resources
1 – 4	1.1 Explain the term constitution. 1.2 Distinguish the different types of constitution. 1.3 Highlight some provisions an International Constitution. 1.4 Explain the effectiveness of International Constitution. 1.5 Explain the supremacy of the Nigerian Constitution to other laws with emphasis on the 1989 Constitution. 1.6 Evaluate the main parts of the Nigeria Constitution. 1.7 Draft a constitution for an association. 1.8 Trace the historical development of the Nigerian Constitution. 1.9 Discuss the merits and demerits of each of the Nigerian constitutions. 1.10 Explain the concept of “rule of law”.	Ask student: <ul style="list-style-type: none"> ▪ What they understand by the term constitution and distinguish the different rules constitution known. ▪ To explain the effectiveness of International Constitution. ▪ To explain Nigerian Constitution to other laws. ▪ To identify the main parts of the Nigerian Constitution. Assess to the students by given the assignment to draft a constitution for an association.	Chalkboard
	General Objective: 2.0 Understand the federal system of government in Nigeria.		
5 – 7	2.1 Describe a federation. 2.2 Distinguish a federation from a confederation. 2.3 Outline the basis for the federal system in Nigeria. 2.4 Examine the evolution, structure and functions of the federal system in Nigeria. 2.5 Analyze the relationships among the three tiers	Ask the students: <ul style="list-style-type: none"> ▪ To describe a federation and to differentiate between a federation and a confederation. ▪ To define the functions of the federal system in Nigeria and the relationship among the three tiers of government. ▪ To evaluate the revenue allocation formula 	Chalk Blackboard Chalkboard

	<p>of government in Nigeria.</p> <p>2.6 Evaluate the revenue allocation formula in operation in Nigeria.</p> <p>2.7 Compare and contrast other federation with Nigeria.</p>	operation in Nigeria.	
General Objective: 3.0 Know the constitutional rights and obligations of Nigerian citizens.			
8 – 9	<p>3.1 Examine the significance of rights and obligations in Nigeria.</p> <p>3.2 Assess government’s protection of fundamental rights as contained in the Nigeria Constitution.</p> <p>3.3 Evaluate the responsibilities and duties of Nigerian citizenships and the benefits for performing them.</p> <p>3.4 Assess the responsibilities and duties of constituted authority to the people.</p> <p>3.5 Evaluate the responsibilities and duties of government to the people.</p>	<p>Ask the student:</p> <ul style="list-style-type: none"> ▪ To discuss and analyze the principles and benefits of citizenship. ▪ To analyze the basis for the acquisition and withdrawal of Nigerian citizenship. 	<p>Blackboard</p> <p>Chalkboard</p>
General Objective: 4.0 Understand Citizenship.			
10 – 12	<p>4.1 Discuss the significance of citizenship.</p> <p>4.2 Analyze the principles and benefits of citizenship.</p> <p>4.3 Explain the difference in the modes of acquiring citizenship.</p> <p>4.4 Evaluate the merits and demerits of each type of citizenship.</p> <p>4.5 Analyze the basis for the acquisition and withdrawal of Nigerian citizenship.</p> <p>4.6 Examine the benefits derivable from Nigeria citizenship.</p>	<ul style="list-style-type: none"> ▪ Ask students to explain the directive principles and policy of the Nigerian. ▪ Government on cultures, the mass media, national ethnics and duties of the citizen. 	<p>Chalkboard</p>

General Objective: 5.0 Fundamental Objectives and directive principles of state policy in Nigeria.		
	<p>5.1 State the fundamental obligations of government as provided in the constitution.</p> <p>5.2 Explain the general provisions of the fundamental objectives and directive principles of state policy</p> <p>5.3 Explain the political, economic, social and education policies of Nigeria.</p> <p>5.4 Explain the directive principles and policy of the Nigerian government on culture, the mass media, national ethnics and duties of the citizen.</p> <p>5.5 Assess the conformity observance and application of the fundamental objectives and directive principles of state policy by governments and people of Nigeria.</p> <p>5.6 Recommend improvements on the provision conformity, observance and application of the fundamental objectives and directive principles of state policy.</p>	<ul style="list-style-type: none"> ▪ Ask the students to explain the directive principles and policy of the Nigerian. ▪ Government on cultures, the mass media, national ethnics and duties of the citizen. <p>Chalkboard</p>

MATHEMATICS COURSES

NATIONAL BOARD FOR TECHNICAL EDUCATION, KADUNA

PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: LOGIC AND LINEAR ALGEBRA		Course Code: MTH 111	Contact Hours: 2-1-0
THEORETICAL CONTENT			
WEEK	General Objective: 1.0 On completion of this course, the students should be able to:		
	Specific Learning Outcome	Teacher Activities	Resources
1 – 2	<p>1.1 The essential connective, negation, conjunction, disjunction, implication and bi-implication.</p> <p>1.2 State the essential connectives defined in 1.1 above.</p> <p>1.3 Explain grouping and parenthesis in logic.</p> <p>1.4 Define Truth Tables.</p> <p>1.5 Define tautology.</p> <p>1.6 Give examples of types of tautology e.g. if P and Q are distinct atomic sentences, which of the following are tautologies? $P \vee B \vee Q$ (b) $P \vee U \vee Q \vee B \vee Q \vee U \vee P$ (c) $P \vee (P * Q)$ Let P = Jane Austen was a contemporary of Beethoven. Q = Beethoven was a contemporary of Gauss. R = Gauss was a contemporary of Napoleon. S = \Rightarrow Napoleon was a contemporary of Julius Caesar. (Thus P, Q and R are true and S is false). Then find the truth values of sentences:- (a) $(P * Q) = R$ (b) $(P \vee B \vee Q)$ (c) $P * Q \vee R \vee B \vee S$</p> <p>1.7 Define universal quantifier and existential quantifier.</p> <p>1.8 Translate sentences into symbolic form using quantifiers e.g. \exists some freshmen are</p>	<ul style="list-style-type: none"> ▪ Explain and illustrate 1.1 to 1.6 and ask the students to find the truth value of the logic statement. ▪ Assess the student. ▪ Explain and illustrate 1.7 to 1.2 and asked the students to solve problems on 1.7 to 1.11. 	<p>Lecture notes Recommended textbooks, charts, and chalkboard.</p>

3 – 4	<p>intelligent = can be stated as for some x, x, is a freshman and x is intelligent = can translate in symbols as $(\exists x) (Fx \ \& \ Ix)$.</p> <p>1.9 Define the scope of a quantifier. 1.10 Define >bound=and free = variables. 1.11 Define >term= and formula = 1.12 Give simple examples of each of 1.9 to 1.11 above. 1.13 Explain the validity of formulae.</p>		
General Objective: 2.0 Know permutation and combination.			
5 – 7	<p>2.1 Define permutations and combinations. 2.2 Give illustrative examples of each of 2.1 above. 2.3 State and approve the fundamental principle of permutation. 2.4 Give illustrative examples of the fundamental principles of permutation. 2.5 Establish the formula ${}^n P_r = n!(n - r)!$ 2.6 Prove that $nPr = (n - r + 1) \times nP(r - 1)$. 2.7 Solve problems of permutations with restrictions on some of the objects. 2.8 Solve problems of permutation in which the objects may be repeated. 2.9 Describe circular permutations. 2.10 Solve problems of permutation of N things not all different. 2.11 Establish the formula ${}^n C_r = n! / [(n - r)! r!]$ 2.12 Solve example 2.11. 2.13 State and prove the theorem ${}^n C_r = nC_{n-r}$. 2.14 Solve problems of combinations with restrictions on some of the objects. 2.1 Solve problems of combinations of n different things taken any number at a time.</p>	<ul style="list-style-type: none"> ▪ Explain and illustrate the activities in 2.1 to 2.15 and ask student to: <ul style="list-style-type: none"> - Establish the formula $nPr = n! / (n-r)!$ - Prove that $nPr = (n-r+1)(nP(r-1))$ - Establish the formula $nCr = n! / [(n-r)! r!]$ - Prove that ${}^n C_r = nC_{n-r}$ 	<p>Recommended textbooks, lecture notes, chalkboard, chalk.</p>

	General Objective: 3.0 Know binomial theorem.		
8 - 10	<p>3.1 Explain with illustrative examples B the method of mathematical induction.</p> <p>3.2 State and prove binomial theorem for positive integral index.</p> <p>3.3 Explain the properties of binomial expansion.</p> <p>3.4 State at least seven (70 examples of 3.3 above. e.g. i. $A(x^2 - 1/x)$ ii. Find the constant term in the expansion of $(x+1/x)^A$ iii. Find the co-efficient of x^v in the expansion of $(x \pm k)^A$ where v is a number lying between Bn and n-</p> <p>3.5 State the binomial theorem for a rational number.</p> <p>3.6 State the properties of binomial coefficients.</p> <p>3.7 Apply binomial expansion in approximations (simple examples only).</p>	<ul style="list-style-type: none"> ▪ Explain and illustrate activities in 3.1 to 3.7 and ask the students to solve them. 	Recommended textbooks, lecture notes, chalkboard, chalk etc.
	General Objective: 4.0 Know matrices and determinants.		
11 – 15	<p>4.1 Define Matrix.</p> <p>4.2 Define the special matrices B zero matrix, identify matrix B square metric, triangular matrix, symmetric matrix, skero symmetric matrix.</p> <p>4.3 State example for each of the matrices in 4 – 2 above.</p> <p>4.4 State the laws of addition and multiplication of matrices.</p> <p>4.5 Illustrate the commutative, associative and distributive nature of the laws states in 4.4 above.</p> <p>4.6 Explain the transpose of a matrix.</p>	<ul style="list-style-type: none"> ▪ Explain and illustrate the activities in 4.1 to 4.19. ▪ Ask the students to prove the theorems and solve problems on the illustrated activities. ▪ Assess the student. 	Recommended textbooks, lecture notes, chalkboard, chalk etc.

<p>4.7 Determine a determinant for $2b \times 3$ and $3b \times 2$ matrices.</p> <p>4.8 Define the minors and cofactors of a determinant.</p> <p>4.9 Explain the method of evaluating determinants.</p> <p>4.10 State and prove the theorem A Two rows or two columns of a matrix are identical, then the value of its determinant is zero.</p> <p>4.11 State and prove the theorem A if two rows or two columns of a matrix are interchanged, the sign of the value of its determinant is changed.</p> <p>4.12 State and prove the theorem. A if any row or column of a matrix is multiplied by a constant, the determinant itself is multiplied by the constant.</p> <p>4.13 State and prove the theorem A if a constant times the elements of a row or column are added to the corresponding elements of any other row or column, the value of the determinant itself is multiplied by the constant.</p> <p>4.14 State five examples of each of the theorems in 4. 10-4 13 above.</p> <p>4.15 Define the adjoint of a matrix.</p> <p>4.16 Explain the inverse of matrix.</p> <p>4.17 State the linear transformation on the rows and columns of a matrix.</p> <p>4.18 Apply Cramer's rule in solving simultaneous linear equations.</p>		
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Assessment: The continuous assessment, tests and quizzes will be awarded 40% of the total score. The end of the Semester Examination will make up for the remaining 60% of the total score.

ALGEBRA AND ELEMENTARY TRIGONOMETRY (MTH 112)

General Objectives

On completion of this course the students will be able to:

1. Understand the laws of indices and their application in simplifying algebraic expressions.
2. Understand the theory of logarithms and surds and their applications in manipulating expressions.
3. Understand principles underlying the construction of charts and graphs.
4. Know the different methods of solving quadratic equations.
5. Understand permutation and combination.
6. Understand the concept of set theory.
7. Understand the properties of arithmetic and geometric progressions.
8. Understand the binomial theorem and its application in the expansion of expressions and in approximations.
9. Understand the basic concept of equations and methods of solving different types of equations and apply same to engineering problems.
10. Understand the definition, manipulation and application of trigonometric functions.

NATIONAL BOARD FOR TECHNICAL EDUCATION, KADUNA

PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: ALGEBRA AND ELEMENTARY TRIGONOMETRY		Course Code: MTH 112	Contact Hours: 2-1-0
THEORETICAL CONTENT			
WEEK	General Objective: 1.0 On completion of this course, the students should be able to:		
	Specific Learning Outcome	Teacher Activities	Resources
1	1.1 Define index. 1.2 Establish the laws of indices. 1.3 Solve simple problems using the laws of indices.	<ul style="list-style-type: none"> ▪ Ask students to solve exercises on indices. ▪ Assess the students. 	Chalkboard, Textbooks, calculators
	General Objective 2.0 Understand Theory of logarithms and surds their applications in manipulating expression.		
2 – 3	2.1 Define logarithm. 2.2 Establish the four basic laws of logarithm. 2.3 Solve simple logarithm problem. 2.4 Define natural logarithm and common logarithm. 2.5 Define characteristic and mantissa. 2.6 Read the logarithmic table for given numbers. 2.7 Simplify numerical expressions using log tables e.g. $18 D = 35 4JPC^2 \wedge M^B$ find D when $J = 0935$, e.g. $0 = 35$, $P = 1.6$. 10^6 , $C = 55$, $M = 0\ 0025$. $n = 3.142$ 2.8 Apply logarithm in solving non-linear equations e.g. $y = ax^n$; $\log y a + n \log x$; $y = bc^x$ $= \log y = \log b + x \log c$; $Y = a bx^n$ B $\text{Log} (Y B D) = \text{Log} b + n \log x$. 2.9 Define surds. 2.10 Reduce a surd into its simplest form. 2.11 Solve simple problems on surds.	<ul style="list-style-type: none"> ▪ Ask the students to solve logarithmic and surd related problems. ▪ Assess the students. 	Chalkboard, chalk, relevant textbooks, logarithms tables.

	General Objective: 3.0 Understand Principles underlying the construction of Charts and graphs.		
4	<p>3.1 Construct graphs of functions fractions such as $Y = ax + b$, $n = 1, 2$ $Y = CST (a+x)$ $Y = ax^k$, Including cases of asymbles.</p> <p>3.2 Apply knowledge from 3.1 in determination as laws from experimental data.</p>	<ul style="list-style-type: none"> Ask the students to draw graphs. 	Chalkboard, chalk, graph books
	General Objective: 4.0 Know the different methods of solving quadratic equations.		
5	<p>4.1 Solve quadratic equations by factorization.</p> <p>4.2 Solve quadratic equations by method of completing squares.</p> <p>4.3 Solve quadratic equations by formula.</p> <p>4.4 Discriminate the roots.</p> <p>4.5 Form equations whose roots are given in different methods.</p>	<ul style="list-style-type: none"> Ask the students to solve quadratic equations. 	Chalkboard, chalk
	General Objective: 5.0 Understand Permutations and Combinations.		
6	<p>5.1 Define permutation.</p> <p>5.2 State examples of permutations.</p> <p>5.3 Define combination.</p> <p>5.4 State examples of combination.</p> <p>5.5 Establish the theorem $nPr = n! / [(n-r)!]$ giving examples e.g. number of ways of collecting two out of 8 balls.</p>	<ul style="list-style-type: none"> Give exercises on permutation and combination to them. 	Chalkboard, chalk
	General Objective: 6.0 Understand the concept of set theory.		
7	<p>6.1 Establish ${}^n C^r = {}^n C^{n-r}$ B r.</p> <p>6.2 Define sets, subsets and null sets.</p> <p>6.3 Define union, inter-section and completion of sets.</p> <p>6.4 Draw Venn diagrams to demonstrate the concepts in 6.1 B 6.3 above.</p> <p>6.5 Calculate the size of number of elements in a given set.</p>	<ul style="list-style-type: none"> Ask the students to solve problems on set theorem. 	Chalkboard, chalk

General Objective: 7.0 Understand the properties of arithmetic and geometric progressions.			
8 – 9	<p>7.1 Define an Arithmetic progression (A.P).</p> <p>7.2 Obtain the formula for nth term and the first n terms of an A.P.</p> <p>7.3 Give examples of the above e.g. find the 20th term of the series e.g. $2 + 4 + 6 + \dots$. Find also the series of the first 20 terms.</p> <p>7.4 Define a geometric progression (G.P.).</p> <p>7.5 Obtain the formula for the nth term and the first n terms of a geometric series.</p> <p>7.6 State examples of 7.5 above e.g. given the sequences $1/3, 1/3^2, \dots$ find the 20th term and hence the sum of the first 20th terms.</p> <p>7.7 Define Arithmetic Mean (AM) and Geometric Mean (G.M.).</p> <p>7.8 Define convergency of series.</p> <p>7.9 Define divergence of series.</p>	<ul style="list-style-type: none"> ▪ Ask the students to apply progression to solve problems. ▪ Assess the students. 	<p>Chalkboard, chalk, duster.</p> <p>Relevant textbooks.</p>
General Objectives: 8.0 Understand the binomial theorem and its application in the expansion of expressions and in approximations.			
	<p>8.1 Explain the method of mathematical induction.</p> <p>8.2 State and prove the binomial theorem for a positive integral index.</p> <p>8.3 Expand expressions of the forms $(x + y)^2$, $(x^2 + y^2)^s$ applying binomial theorem.</p> <p>8.4 Find the coefficient of a particular term in the expansion of simple binomial expressions.</p> <p>8.5 Find the middle term in the expansion of binomial expression.</p> <p>8.6 State the binomial theorem of the form: $(1 + X)^{-1}$, $(1 + X)^2$, $(1 + X)^a$ applying binomial theorem.</p> <p>8.7 Expand and approximate expressions of the</p>	<ul style="list-style-type: none"> ▪ State the importance and application of the theorem. 	<p>Chalkboard</p> <p>Chalk</p>

	type $(1.001)^n$, $(0.998)^n$, $(1 + x)^2$, $(1 - Bx)^a$ to stated degree of accuracy applying/scalar expressions.		
	General Objectives: 9.0 Understand the basic concepts and manipulation of vectors and their application to the solution of Engineering problems.		
11	<p>9.1 State the definitions and representations of vectors.</p> <p>9.2 Define a position vector.</p> <p>9.3 Define unit vector.</p> <p>9.4 Explain scalar multiple of a vector.</p> <p>9.5 List the characteristics of parallel vectors.</p> <p>9.6 Identify quantities that may be classified as vector e.g. displacement velocity, acceleration, force etc.</p> <p>9.7 Compute the modulus of any given vector up to 2 and 3 dimension.</p> <p>9.8 State the parallelogram law in solving problems including addition and subtraction of vectors.</p> <p>9.9 Apply the parallelogram law in solving problems including addition and subtraction of vectors.</p> <p>9.10 Explain the concept of components of a vector and the meaning of orthogonal components.</p> <p>9.11 Resolve a vector into orthogonal components.</p> <p>9.12 List characteristics of coplanar localized vectors.</p> <p>9.13 Define the resultant of composition of coplanar vectors.</p> <p>9.14 Compute the resultant of coplanar forces acting at a point using algebraic and graphical methods.</p>	<ul style="list-style-type: none"> ▪ Apply the techniques of vectors to solve various problems. 	Chalkboard, chalk Relevant Textbooks

12	<p>9.15 Apply the techniques of resolution and resultant to the solution of problems involving coplanar forces.</p> <p>9.16 Apply vectoral techniques in solving problems involving relative velocity.</p> <p>9.17 State the scalar product of two vectors.</p> <p>9.18 Compute the scalar product of a given vectors.</p> <p>9.19 Define the cross product of the vector product or two vectors.</p> <p>9.20 Calculate the direction ratios of given vectors.</p> <p>9.21 Calculate the angle between two vectors using the scalar.</p>		
General Objective: 10.0 Understand the concept of equation and apply same to engineering problems.			
13 – 14	<p>10.1 Explain the concept of equation, i.e. $A = B$ where A and B are expressions.</p> <p>10.2 List different types of equations:- Linear, quadratic, cubic etc.</p> <p>10.3 State examples of linear simultaneous equations with two unknowns and simultaneous equations with at least one quadratic equation.</p> <p>10.4 Apply algebraic and graphical methods in solving two simultaneous equations involving a linear equation and a quadratic equation.</p> <p>10.5 Apply the algebraic and graphical methods in solving two simultaneous quadratic equations.</p> <p>10.6 Define a determinant of n^{th} order.</p> <p>10.7 Apply determinants of order 2 and 3 in solving simultaneous linear equations.</p>	<ul style="list-style-type: none"> ▪ Ask the students to solve various equations as indicated in section 10. ▪ Assess the students. 	Chalkboard, chalk

General Objectives: 11.0 Understand the definition, manipulation and application of trigonometric functions.			
15	<p>11.1 Define the basic trigonometric ratios, sine, cosine and tangent of an angle.</p> <p>11.2 Derive the other trigonometric ratios; cosecant, secant and cotangent using the basic trigonometric ratios in 11.1 above.</p> <p>11.3 Derive identities involving the trigonometric ratios of the form; $\text{Cos}^2\theta + \text{Sin}^2\theta = 1$, $\text{Sec}^2\theta = 1 + \tan^2\theta$, etc.</p> <p>11.4 Derive the compound angle formulae for $\sin(A + B)$, $\text{Cos}(A + B)$ and $\text{Tan}(A + B)$.</p>	<ul style="list-style-type: none"> ▪ Define and derive the trigonometric ratios and identities. 	Chalkboard, chalk

ASSESSMENT: The continuous assessment, tests and quizzes will be awarded 40% of the total score. The end of the semester Examination will make up for the remaining 60% of the total score.

DRAWING COURSES

	<p>2.6 Illustrate conventional signs and symbols.</p> <p>2.7 Layout a given set of drawing on a given sheet using the conventional signs, symbols and appropriate lettering characters.</p>		
General Objective: 3.0 Know the Construction of simple geometric figures and shapes.			
6 – 7	<p>3.1 Explain the purpose of geometrical construction in drawing.</p> <p>3.2 Construct parallel and perpendicular lines.</p> <p>3.3 Construct and bisect lines, angles and areas.</p> <p>3.4 Divide a straight line into given number of equal parts.</p> <p>3.5 Identify polygons (regular or irregular).</p> <p>3.6 Construct regular polygons with:</p> <p>a) N sides in a given circle.</p> <p>b) A given side length and of N side on a straight line.</p> <p>3.7 Define a circle.</p> <p>3.8 Explain the properties of a circle e.g. radius, diameter, normal tangent, circumference etc.</p> <p>3.9 Carryout simple geometrical constructions on circle e.g.</p> <p>a) The diameter of a given circle the circumference.</p> <p>b) The circumference of a circle of a give diameter.</p> <p>c) A circle to pass 3 points.</p> <p>d) A circle to pass through 3 points and touch a given line.</p> <p>e) A circle to touch a given smaller circle and a given line.</p> <p>f) Tangents to circles at various points.</p> <p>g) An arc of know radius, tangent to tow lines at an angle of less than and more than 90o.</p>	<ul style="list-style-type: none"> ▪ Show the different geometrical construction on circles. 	Chalk, chalkboard, drawing board and materials
8			

9	<p>h) An arc externally tangent to two circles. Inscribing and exscribing circles. 3.10 Define an ellipse. 3.111 Construct and ellipse by using.</p> <p>a) Trammel method. b) Concentric circle method.</p>	<ul style="list-style-type: none"> ▪ Construct and ellipse using the methods listed. 	<p>Chalkboard Trammel</p>
General Objective: 4.0 Know the Construction of isometric and obliques drawings and projections.			
11 – 12	<p>4.1 Explain isometric and obliques projections. 4.2 Draw a square in isometric and oblique forms. 4.3 Draw a circle in isometric and oblique forms. 4.4 Draw an ellipse in isometric and oblique forms. 4.5 Draw a polygon with a minimum of eight sides in isometric and oblique forms. 4.6 Dimension holes, circles, arcs and angles correctly in isometric and obliques drawings. 4.7 Use appropriate conventional symbols and abbreviations.</p>	<ul style="list-style-type: none"> ▪ Show to students how to draw 4.2 to 4.6. 	<p>Drawing materials, equipment and instruments</p>
General Objective: 5.0 Understand the principles of orthographic projections.			
13 -14	<p>5.1 Explain the principles of orthographic projections. 5.2 Illustrate the principle planes or projection: a) Vertical plane b) Horizontal plane 5.3 Explain why the first and third angles are used and the second and fourth angle are not used. 5.4 Project views of three-dimensional objects on to the basic plane of projection in both first and third angle to obtain: a) The front view or elevation b) The top view or plan.</p>	<ul style="list-style-type: none"> ▪ Project view of their dimensional on both first and third angle. 	<p>Drawing board and materials</p>

General Objective: Understand the Intersections of regular solids.			
15	<p>6.1 Explain interpenetrations of solids.</p> <p>6.2 Draw the lines of intersections of the following regular solids and planes in both first and third angles:</p> <p>a) Two dissimilar square [prisms meeting at right angles.</p> <p>b) Two dissimilar square prisms meeting at an angle.</p> <p>c) A hexagonal prism meeting square prism at right angles.</p> <p>d) Two dissimilar cylinders meeting at right angles.</p> <p>e) Two dissimilar cylinders meeting at an angle.</p> <p>f) Two dissimilar cylinders meetings at right angle, their centers not being in the same vertical plane.</p>	<ul style="list-style-type: none"> ▪ Sketch lines of intersections to students of solid and planes in both first and third angles. 	Drawing board and materials

ASSESSMENT: Course work: 20%, Course test: 20%, Practical: 20%, Examination: 40%.

COMPETENCY: The students should be conversant with the fundamentals of technical drawing and their applications in engineering and technology.

REFERENCE:

1. M.G. Swah etal “Building Drawing”
2. Ceck Handisyee “ Everyday Details”

NATIONAL BOARD FOR TECHNICAL EDUCATION, KADUNA

PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: TECHNICAL DRAWING		Course Code: ARC 101	Contact Hours: 1-0-2
THEORETICAL CONTENT			
WEEK	General Objective: 1.0		
	Specific Learning Outcomes	Teacher Activities	Resources
1 – 5	<ul style="list-style-type: none"> a) Layout drawing sheets with the following: b) Margin c) Title block etc. d) Print letters and figures of various forms and characters. e) Layout a given set of drawings on a given sheet using the conventional signs, symbols and appropriate lettering characters. 	<ul style="list-style-type: none"> ▪ Illustrate on the chalkboard ▪ Demonstrate using examples 	Chalkboard Drawing sheets of various standards. Chalkboard
6	<ul style="list-style-type: none"> a) Construct parallel and perpendicular lines. b) Construct and bisect lines, angles and areas. c) Divide a straight line into given number of equal parts. 	<ul style="list-style-type: none"> ▪ Show students how to construct simple geometrical figures and shapes. 	Chalkboard Drawing Board
7	<ul style="list-style-type: none"> a) Construct regular polygons with: b) N sides in a given circle. c) A given side length and of N side on a straight line. 	<ul style="list-style-type: none"> ▪ Show students how to construct polygons. 	Drawing Boards and Materials.
8	<ul style="list-style-type: none"> a) Carry out simple geometrical constructions on circles e.g. b) The diameter of a circle given the circumference. c) The circumference of a circle of a given diameter. d) A circle to pass through 3 points. e) A circle compass through 2 points and touch a given line. f) A circle to touch a given smaller circle and a 	<ul style="list-style-type: none"> ▪ Show different geometrical constructions on circles to students with other examples. 	Chalkboard, Drawing Board and Materials, Relevant drawing text books.

	<p>given line.</p> <p>g) Tangents to circles at various points.</p> <p>h) An arc of known radius, tangent to two lines at an angle of less than and more than 90°.</p> <p>i) An arc externally tangent to two circles.</p> <p>j) Inscribing and exscribing circles.</p>		
9-11	<p>a) Construct an ellipse by using:</p> <p>b) Trammel method.</p> <p>c) Concentric circle method.</p> <p>d) Construct plane scales, diagonal scales and scale cut using appropriate instruments.</p>	<ul style="list-style-type: none"> ▪ Construct an ellipse using the methods listed. ▪ Demonstrate with examples. 	<p>Chalkboard Trammel.</p> <p>Drawing instruments chalkboard.</p>
12	<p>a) Draw a square in isometric and oblique forms.</p> <p>b) Draw a circle in isometric and oblique forms.</p> <p>c) Draw an ellipse in isometric and oblique forms.</p> <p>d) Draw a polygon with a minimum of eight sides in isometric and oblique forms.</p> <p>e) Dimensions holes, circles, arcs and angles correctly in isometric and oblique drawings.</p>	<ul style="list-style-type: none"> ▪ Demonstrate to students how to draw. ▪ Circle in isometric and oblique forms. ▪ Ellipse on isometric and oblique forms. ▪ Polygons in isometric and oblique forms. 	<p>Drawing Board and Materials.</p>
14	<p>a) Project views of three-dimensional objects on to the basic planes of projection in both first and third angle to obtain:</p> <p>b) The front view or elevation.</p> <p>c) The top view or plan.</p>	<ul style="list-style-type: none"> ▪ Ask the students to carry out projections of three-dimensional objects. 	<p>Drawing Board and Materials.</p>
15	<p>a) Draw the lines of intersections of the following regular solids and planes in both first and third angles:</p> <p>i) Two dissimilar square prisms meeting at right angles.</p> <p>ii) Two dissimilar square prisms meeting at an angle.</p> <p>iii) A hexagonal prism meeting</p>	<ul style="list-style-type: none"> ▪ Ask the students to draw lines of intersections of regular solids and planes. 	<p>Drawing Board and Materials.</p>

	<p>iv) square prism at right angles. Two dissimilar cylinders meeting at right angles.</p> <p>v) Two dissimilar cylinders meeting at an angle.</p> <p>vi) Two dissimilar cylinders meeting at right angle, their centers not being in the same vertical plane.</p>	<ul style="list-style-type: none"> ▪ Assess the students 	<p>Ditto</p>
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SURVEYING COURSES

NATIONAL BOARD FOR TECHNICAL EDUCATION, KADUNA

PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: BASIC PRINCIPLES IN SURVEYING I		Course Code: SUG 101	Contact Hours: 1-0-3
THEORETICAL CONTENT			
WEEK	General Objective: 1.0 Understanding the Basic Principles and Scope of Surveying and Geo-informatics.		
	Specific Learning Outcomes	Teacher Activities	Resources
1	<p>Basic Principle and scope of Surveying Geo-informatics</p> <p>1.1 Explain the principle of working from ‘whole to part’ in Survey/Geo-data works.</p> <p>1.2 State the importance of “Scientific honesty” made on observations.</p> <p>1.3 Explain with examples the various “checks” made on filed observations and during computation.</p> <p>1.4 Define errors or misclosure in surveys and describe methods of “balancing” these.</p> <p>1.5 Explain the need and procedure for “examination: of Surveys and Geo-data.</p> <p>1.6 Describe the various classes of Surveys/Geo-data and their order of accuracy.</p> <p>1.7 Explain the principles of ‘economy of accuracy’ and its influences on choice of equipment and methods.</p> <p>1.8 Explain the principles of ‘consistency’ in Surveys/Geo-data.</p> <p>1.9 Distinguish between accuracy and precision.</p> <p>1.10 Describe the procedure of entrusting ‘custody’ of Survey/Geo-data monuments to local officials and the instructions for their ‘preservation’.</p>	<ul style="list-style-type: none"> ▪ Lecture, give examples of various classes of survey as used in civil engineering. ▪ Ask the students to identify different branches of Surveying and Geo-data. 	<p>Chalk, chalkboard, textbooks etc.</p> <p>Filed books/Tables</p>

2	1.11 Name the different branches of Surveying and Geo-informatics stating their aims e.g. geodetic survey topographic survey, cadastral survey, hydrographic survey, engineering and large scale surveys.		
General Objective: 2.0 Understand the use and methods using Linen and steel tapes in making linear measurements.			
3	Linear Measurement and Chain Surveying. 2.1 Explain the effect of (a) misalignment (b) slope (c) temperature (d) tension and (e) standardization error on measured distances. 2.2 Apply the corrections listed in 2.1 above. 2.3 Identify chain surveying instruments e.g. Linen tapes, steel tapes, ranging rods. 2.4 State the necessary precautions in use of the above instruments. 2.5 State the criteria for selection of surveying lines and offsets and the limitations of lengths. 2.6 Describe the methods of making linear measurements in chain surveys – both along the survey line and along offsets.	<ul style="list-style-type: none"> ▪ Lecture, examples of calculation for corrections to be given. 	Tapes, chains and ranging rods.
4	2.7 State limiting conditions on measurement accuracy on 2.6 above. 2.8 Explain common errors in chain surveying and their sources – e.g. squaring of building corners, wrong booking of values. 2.9 Explain with sketches the basic methods of check or proof lines, the use of control framework for position and orientation. 2.10 Describe the general procedure for carrying out a chain survey.	<ul style="list-style-type: none"> ▪ Explain to the students various items involved in linear measurement and chain surveying. ▪ Ask students to carryout a survey of an area of at least one area. 	Tapes, chain and ranging rod.

	General Objective: 4.0 Tertiary Leveling.		
9 – 10	Angular Measurement. 4.1 Describe the various units of angular measure e.g. degrees grads and radian measures, working out with their convention factors. 4.2 Explain the working principles of a surveyors' (Prismatic) compass. 4.3 Describe the procedure of observation with a surveyors' (Prismatic) compass. 4.4 Explain the method of observation with a theodolite. 4.5 Explain the difference in the reading procedure of a theodolites. 4.6 Carryout angular measurements with prismatic compass and theodolites.	<ul style="list-style-type: none"> ▪ Lecture; give examples of reduction of levels to National datum. 	Levels of various types, staff.
	General Objective: 5.0 Understand the principles of survey computations and plotting.		
11	Survey Computation and Plotting. 5.1 Reduce the measured filed data with a theodolite to obtain required angles. 5.2 Deduce bearings from the obtained angles. 5.3 Adjust compass bearings of the compass surveyed area. 5.4 Carryout the computation of 5.5 above. 5.5 Retrieve the measured filed data of the surveyed area by a total station onto a PC. 5.6 Process the data using the PC. 5.7 Plot the plan of the surveyed area manually at different scales (small, medium and large).	<ul style="list-style-type: none"> ▪ Lecture, give examples of computations. 	Calculation, computer.
	General Objective: 6.0 Read, interpret make measurement from maps, layout and engineering plan.		
12 - 13	6.1 State the uses of different types of map e.g. atlas, geographical, topographical, engineering and guide maps. 6.2 Explain the principles of map scale.	<ul style="list-style-type: none"> ▪ Lecture ▪ Give students maps and examples to works on. 	Examples of various of maps to students to examine.

<p>6.3 State the relationship between map scale or representative fractions and the contour interval.</p> <p>6.4 Identify map symbols and conventional signs.</p> <p>6.5 Explain their basis and use.</p> <p>6.6 Identify various Nigerians map series.</p> <p>6.7 Use map catalogues.</p> <p>6.8 Describe various methods of showing relief on maps e.g. spot, height, hachures, contours.</p> <p>6.9 Define map grids.</p> <p>6.10 Use map grids.</p> <p>6.11 Explain how to establish different reference directions e.g. true north, grid north and magnetic north.</p> <p>6.12 Define the relationship between the different directions i.e convergence, declination and compass variation.</p> <p>6.13 Scale off grid coordinates</p> <p>6.14 Interpret different types of map, layout plans and diagrams/sketches.</p> <p>6.15 Identify simple planimetric details on imageries.</p> <p>6.16 Measure distances from maps and plans.</p> <p>6.17 Determine radius of curves from given diagram.</p> <p>6.18 Read off directions/bearing between given features.</p> <p>6.19 Describe different map reference system.</p>	<ul style="list-style-type: none"> ▪ Lecture students the main feature grids. 	<p>Set maps for students exercises.</p> <p>Drawing instruments, protractors dividers, parallel rule, scale, rules.</p>
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Revision: 2 weeks

References: Survey for Engineer (1994) Uran J and Price WF Macmillan
Site Surveying (1993) Muskett J., Blackwell.

Assessment: Coursework 20% course tests 20% Practicals 20% Examination 40%

Competency: The student completing this unit should be proficient at measuring distances, and in undertaking a chain survey. The student should also be familiar with leveling techniques be able to reduce the data and plot profiles of levels.

The student should be able to use a theodolite for measuring and setting out angles, undertake associated calculations and read maps accurately.

NATIONAL BOARD FOR TECHNICAL EDUCATION, KADUNA

PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: Basic Principles of Surveying I		Course Code: 101	Contact Hours: 1-0-3
THEORETICAL CONTENT			
WEEK	General Objective: 1.0 To Introduce the Students to Basic Principles and Methods in Surveying		
	Specific Learning Outcomes	Teacher Activities	Resources
1-2	1.1 Range out a straight line (a) between two-infeasible points, (b) between two points that are not inter-visible.	<ul style="list-style-type: none"> ▪ Demonstrate and supervise ranging using ranging poles and total stations. 	Total station, target. Line, ranging poles, linen tape, and chain.
3-4	1.2 Carry out liner measurement with tape	<ul style="list-style-type: none"> ▪ Supervises the art of measuring using tapes. 	Ditto
5-6	1.3 Carry out chain surveying exercise of a section of the institution.	<ul style="list-style-type: none"> ▪ Organizes chain surveying procedure 	Chain, tapes, ranging poles.
9-11	1.4 Carry out leveling exercises in the school of Environmental Studies and Engineering.	<ul style="list-style-type: none"> ▪ Supervise leveling procedure. ▪ Directs students to prepare drawing sheets for profiling. 	Engineer level, staff. Computer, target.
12-15	1.5 Carry out a profile leveling of all major roads and isles of the institution and plotting the longitudinal sections and cross-sections of the profiles. Measure horizontal angles and vertical angles with a theodolite. Set on 90° and other angles with the theodolite.		Digital level, ranging poles, linen tapes drawing paper, pencil eraser, 20'' theodolite, tripods targets, ranging rods peg.

NATIONAL BOARD FOR TECHNICAL EDUCATION, KADUNA

PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: Urban Planning Principles and Techniques I		Course Code: URP 117	Contact Hours: 1-0-2
THEORETICAL CONTENT			
WEEK	General Objective: 1.0 Understand the objectives of Urban and Regional Planning		
	Specific Learning Outcomes	Teacher Activities	Resources
1-2	Objectives of Urban and Regional Planning 1.1 Define Urban and Regional Planning. 1.2 Explain why there is the need to plan. 1.3 Analyse the scope of Urban and Regional Planning. 1.4 Outline then physical planning process.	<ul style="list-style-type: none"> ▪ Explain the features of Urban and Regional Planning its needs and scope. 	Relevant Textbooks, Journals, periodicals, measuring tapes, leveling instruments, calculators etc.
	General Objective: 2.0 Know Urban and Regional theory		
3-4	Urban and Regional Planning Theory 2.1 Appreciate urban planning theories that have been evolved over a long time e.g. (Greeks, Romans Egyptians, etc.) 2.2 Explain concepts postulated by Geddes, Corbusier, perry, Mumford, Howard, etc. 2.3 state the impact of the concepts mentioned in 2.2 on temporary planning philosophy. 2.4 Explain the different types of planning.	<ul style="list-style-type: none"> ▪ Explain he techniques of urban and regional planning ▪ Give assignments 	Relevant textbooks, journals periodicals.

	General Objective: 3.0 Know the needs and basic forms of surveys for planning studies.		
5-6	Basic forms of survey for planning 3.1 Distinguish between 'data and information'. 3.2 Explain concepts postulated by Geddes, Crbusier, Perry, Mumford, Howard, etc. 3.3 State the impact of the concepts mentioned in 2.2 on contemporary planning philosophy.	<ul style="list-style-type: none"> ▪ Explain the process of the basic forms of Survey for planning studies. ▪ Conduct site survey. ▪ Give students assignments. 	Survey equipments.
	General Objectives 4.0 Understand the principles and practice of Town Plans/Master Plans/Structure Plans etc.		
7-8	Principles and Practice of Urban Plans 4.1 Explain the purpose of develop plans/town plans/structure plans etc. 4.2 Outline the scope of development plans/town plans/structure plans, etc. plans/town plans/structure plans, etc. 4.3 Enumerate the 'characteristics of development plans/town plans/structure plans,etc. 4.4 Explain the process of preparing plans, etc. 4.5 Identify the tools for implementing plans/town plans/structure plans, etc.	<ul style="list-style-type: none"> ▪ Explain the principles and practice of urban plans. ▪ Explain types of planning tools. ▪ Give students assignments. 	Relevant Books for implementry town plans.

	General Objective: 5.0 Know the concept of space standards.		
9-10	SPACE STANDARDS 5.1 Explain the purpose of space standards. 5.2 Outline the characteristics of space standards. 5.3 Determine the objectives of Space Standards in the development of industrial, commercial recreational uses. 5.4 Explain the use various space standards for Urban Planning practice.	<ul style="list-style-type: none"> ▪ Explain space standards broadly and its uses or urban planning practice. ▪ Give students assignments. 	Relevant Text-books chalk board, chalk and journals
	General Objective: 6.0 Understand the detailed planning design.		
11-12	Planning design 6.1 Relate planning to the planning of theories to central areas, planning shopping centres of industrial areas, recreational areas, etc. 6.2 Undertaken the detailed planning of central areas, shopping centres, industrial areas, ‘recreational areas, etc. 6.3 Present each of the plans to audience for critique.	<ul style="list-style-type: none"> ▪ Explain planning design ▪ Planned of central, shopping Industrial areas etc. ▪ Give students assignments. 	Drawing equipments and tools.
	General Objective: 7.0 Understand the Principles and Techniques of Urban Renewal.		
13-14	Principles and Techniques of Urban Renewal 7.1 Explain the terms, ‘urban renewal,’ urban blight’ and treatment areas.’ 7.2 ‘Identify problems associated with slums such as physical, social economic, administrative, aesthetic, etc. 7.3 Explain the methods/strategies available for central area renewal and non-residential renewal-redevelopment, rehabilitation conservation, etc.	<ul style="list-style-type: none"> ▪ Explain principles and techniques of urban Renewal. ▪ Conduct site visit. ▪ Give assignments. 	Vehicles and relevant text books

NATIONAL BOARD FOR TECHNICAL EDUCATION, KADUNA

PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: Introduction to Estate Management		Course Code: EST III	Contact Hours: 2-0-0
THEORETICAL CONTENT			
WEEK	General Objective: 1.0 Understand the Principles of Estate Management.		
	Specific Learning Outcomes	Teacher Activities	Resources
1 - 2	<p>Principles of Estate management.</p> <p>1.1 Define management</p> <p>1.2 Define Estate</p> <p>1.3 Explain Estate management</p> <p>1.4 State the objectives of Estate management.</p> <p>1.5 Determine the aim and scope of Estate Management e.g. profit, independence, status and prestige etc.</p> <p>1.6 Explain the different types of management in relation to Estate Management profession.</p> <p>1.7 Outline each role and its application.</p>	<ul style="list-style-type: none"> ▪ The teacher should give broad overview of Estate Management to the students giving relevant examples. 	<p>Textbooks and journals.</p> <p>Chalk, chalkboard.</p> <p>Conference papers.</p>
	General Objective: 2.0 Understand the factors influencing the use and management of Estates		
3 - 4	<p>Factors influencing the use and management of Estate.</p> <p>2.1 Outline the different features of Estate:</p> <p style="margin-left: 20px;">a) Physical identity</p> <p style="margin-left: 20px;">b) Economic condition</p> <p style="margin-left: 20px;">c) Legal status</p> <p style="margin-left: 20px;">d) Management Character.</p> <p>2.2 State the factors influencing each of them and their uses.</p> <p>2.3 Determine the effects of each feature in relation to management decision for the difference estates.</p>	<ul style="list-style-type: none"> ▪ The teacher should explain Diggent features of Estate and factors influencing each of them. ▪ Ask students to relation decision to solving Estate Management problems. 	<p>Relevant textbooks and journals.</p> <p>Conference papers.</p>

	2.4 Relate the decision in solving Estate Management problems.		
General Objective: 3.0 Understand the creation of Estate.			
5 - 6	3.1 State the processes involved in the creation of Estates. 3.2 Outline the different types of Estates e.g. Freehold, lease hold etc.	<ul style="list-style-type: none"> Explain to eat students various processes involved in creation of different estates 	Relevant textbooks journals and periodicals
General Objective: 4.0 Understand the major functions of an Estate Survey or and Valuer.			
7 - 8	Functions of an Estate Surveyor and Valuer 4.1 Explain who is an Estate Surveyor and Valuer. 4.2 Describe the roles and qualities of an Estate Surveyor and Valuer. 4.3 Distinguish between an Estate Surveyor and an Estate Agent in relation to their functions.	<ul style="list-style-type: none"> The teacher should distinguish between professionals and quacks. 	Relevant textbooks journals and periodicals NIESV directory.
General Objective: 5.0 Understand the rights and interests in land.			
9 - 10	Rights and interests in Land. 5.1 Explain the following concepts: a) Land in Estate Management context b) Estates in Land. 5.2 Differentiate between both concepts 5.3 Outline the types of interests in land e.g. easements, etc. 5.4 Describe the various rights and interests in land. 5.5 Relate them to the practice of the profession.	<ul style="list-style-type: none"> The teacher should relate all lectures in the items highlighted to the profession. 	Relevant textbooks. Journals and periodicals.

General Objective: 6.0 Know the various stages of the life of Estate.			
11 - 12	Stage of the life styles of an Estate. 6.1 Explain the meaning of an Estate life cycle. 6.2 Trace the stages min life cycle of an Estate from pre-development to obsolesce and re-development stages. 6.3 Outline the management problems encountered at each stage. 6.4 State the useful-life of an Estate in relations to the practice. 6.5 Visit a slum area.	<ul style="list-style-type: none"> ▪ The lecturer should organize a guided trip to a typical slum area. ▪ Ask students to write reports .on trip. 	Vehicle Visit to slum area.
General Objective: 7.0 Know the principal types of property and interest existing in them.			
13 – 14	Types of Property and Interest. 7.1 Define property and their importance. 7.2 Outline the types of properties: <ul style="list-style-type: none"> - Commercial - Residential - Industrial - Recreational etc. 7.3 Explain the effect of interest on property transaction in Nigeria. 7.4 Distinguish between the Nigerian and foreign types of interests in Land. 7.5 Provide simple examples.	<ul style="list-style-type: none"> ▪ Lecturer should do a comparative study of two or more foreign countries in relations to interest in land. 	Vehicle, camera, video-camera Textbooks and land us Act of 1978.

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PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: Introduction to Accounting		Course Code: EST II2	Contact Hours: 2-0-0
THEORETICAL CONTENT			
WEEK	General Objective: 1.0 Understand the Principles of Estate Management.		
	Specific Learning Outcomes	Teacher Activities	Resources
1 - 2	Accounting Concept. 1.1 Discuss the development of Accounting rules and concepts. 1.2 Explain the conventional practice in accounting.	<ul style="list-style-type: none"> ▪ Lecturer should demonstrate with relevant examples in relation to the profession. 	Relevant textbooks and ledgers.
	General Objective: 2.0 Understand the role of Accounting in Business Operations.		
3 - 4	Role Of Accounting. 2.1 Explain the use of accounting in an enterprise. 2.2 Explain the various books of accounts.	<ul style="list-style-type: none"> ▪ Display to the students various. ▪ Books of account. 	Typical account books.
	General Objective: 3.0 Understand the principles of double Entry Book-Keeping.		
5 - 6	Double Entry Book-Keeping. 3.1 Explain the theory of double Entry Book-Keeping in Accounts. 3.2 Outline sources of entry into Transactions e.g. bought day book, sales pay book, bought returns, sales returns etc. 3.3 Draw up worked examples.	<ul style="list-style-type: none"> ▪ Lecturer should provide worked examples for the various transaction. 	Typical transaction books.
	General Objective: 4.0 Understand the Cash Book and Bank Reconciliation.		

7 – 8	Cash Book and Bank Reconciliation. 4.1 Define column cash book – Three columns i.e. discount column, cash column, bank column. 4.2 Explain bank reconciliation statement. 4.3 Outline how bank statements can be reconciled with cash book balances. 4.4 Draw up worked examples.	<ul style="list-style-type: none"> Lecturer should display various bank statements of accounts and reconciliation statements. 	Typical balance sheets, reconciliation statements.
General Objective: 5.0 Understand the differences between Capital and Revenue Expenditure.			
9 – 10	Capital Revenue and Expenditures. 5.1 Outline capital items and revenue items. 5.2 Define capitalization and the write-off against revenue of the two sets of expenditures. 5.3 Explain why disciplinary accounting principles are based on actual basis. 5.4 Draw up worked examples.	<ul style="list-style-type: none"> Lecturer should draw up a capitalization charts with worked examples. 	Typical capitalization charts books.
General Objective: 6.0 Understand the use of Ledger and Trial Balance.			
11 – 12	Ledger and Trial Balance. 6.1 Outline the different forms of ledger account. 6.2 Explain how postings can be made from prime books to ledger accounts. 6.3 State the procedure in preparing trial balance. 6.4 Check the errors that affects trial balance and those that do not. 6.5 Develop a ledger and trial balance.	<ul style="list-style-type: none"> Lecturer should prepare a typical ledger and trial balance and compare with already prepared ledger and trial balance. 	Typical ledger books Trial balance sheets.
General Objective: 7.0 Understand the preparations of final accounts of sale trader.			
13 – 14	Final Account. 7.1 Describe trading accounts and profit and loss account. 7.2 Explain balance sheet as the statements of financial position. 7.3 Draw up one in all cases.	<ul style="list-style-type: none"> Lecturer should prepare typical trading account, profit and loss account. 	Typical trading, and loss account books.

NATIONAL BOARD FOR TECHNICAL EDUCATION, KADUNA

PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: Nigerian Legal Systems		Course Code: EST II3	Contact Hours: 2-0-0
THEORETICAL CONTENT			
WEEK	General Objective: 1.0 Understand the basic principles of Nigerian Law.		
	Specific Learning Outcomes	Teacher Activities	Resources
1 - 4	<p>Principles of Nigerian Law.</p> <p>1.1 Define Law.</p> <p>1.2 State the importance of Law.</p> <p>1.3 Explain the sources of Nigerian Law.</p> <p>1.4 Distinguish between statutory Law and case Law.</p> <p>1.5 Appraise the introduction and adoption of modern Law in Nigeria.</p> <p>1.6 Determine their effects on Estate management practice.</p>	<ul style="list-style-type: none"> ▪ Lecturer should give indepth explanations in Nigerian Legal Systems. 	Law Textbooks and materials.
	General Objective: Understand Judicial Processes in Nigeria.		
5 – 8	<p>Judicial Processes in Nigeria.</p> <p>2.1 Explain the structure of courts in Nigeria and their functions.</p> <p>2.2 Explain the nature of law and the judicial procedures.</p> <p>2.3 Evaluate judicial processes in Nigeria.</p> <p>2.4 Determine the roles of Estate Surveyors in the judicial processes at the:</p> <ul style="list-style-type: none"> - Federal Level - State Level - Local Level <p>2.5 Evaluate the effect of the judicial processes on the masses.</p>	<ul style="list-style-type: none"> ▪ Give comparative study of the roles of Estate Surveyors at the various levels. 	Law books and materials Legal documents at all levels.

General Objective: 3.0 Understand procedural details of Nigerian Law of Evidence			
9 – 12	<p>Nigerian Law of Evidence.</p> <p>3.1 Explain how civil actions are originated.</p> <p>3.2 Discuss pleadings and hearings.</p> <p>3.3 Explain judgements and appeal machinery.</p> <p>3.4 Apply these laws in selected topics in Estate Management.</p> <p>Cite cases in your state of operation.</p>	<ul style="list-style-type: none"> ▪ Give an indepth lecture on pleading, hearing, judgements and appeal machinery as its applies to the Nigerian Law. ▪ Cite relevant examples. 	<p>Legal documents on pleading, hearing, judgements etc.</p>

NATIONAL BOARD FOR TECHNICAL EDUCATION, KADUNA

PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: Principles of Accounting		Course Code: EST I22	Contact Hours: 2-1-0
THEORETICAL CONTENT			
WEEK	General Objective: 1.0 Understand the basic principles of Nigerian Law.		
1	Specific Learning Outcomes	Teacher Activities	Resources
	Single Entry Transaction and Incomplete records. 1.1 Outline how to prepare final accounts. 1.2 Describe how to record goods on sales accounts. 1.3 Explain how to prepare such accounts. 1.4 Prepare one.	<ul style="list-style-type: none"> ▪ Lecturer should lecture and prepare final accounts. 	Relevant textbooks, materials and balance sheets.
General Objective: 2.0 Understand the accounts of non-trading organization.			
2	Accounts of Non-Trading Organization.	Teacher Activities	Resources
	2.1 List some non-trading organizations. 2.2 Explain the following accounts i.e. Recipients and Payments, Income and Expenditure. 2.3 Draw up worked examples.	<ul style="list-style-type: none"> ▪ Lecturer should give over view of recipients and payments, income and expenditure with relevant worked examples. 	Relevant textbooks and materials.
General Objective: 3.0 Understand the purpose of manufacturing accounts.			
3	Manufacturing Accounts.	Teacher Activities	Resources
	3.1 Describe manufacturing accounts. 3.2 Outline items of prime costs in production and manufacturing. 3.3 Explain factory costs and total costs of production. 3.4 State how they are prepared. 3.5 Draw up worked examples.	<ul style="list-style-type: none"> ▪ Prepare manufacturing account with relevant worked examples. 	Relevant textbooks and materials.

	General Objective: 4.0 Understand joint venture and consignment Accounts.		
4	Joint Venture and Consignment Accounts. 4.1 Describe joint venture account. 4.2 Explain how consignment account is prepared. 4.3 Outline the procedure for preparing the accounts. 4.4 Draw up worked examples.	<ul style="list-style-type: none"> ▪ Give a comparative lecture and consignment account with relevant worked examples. 	Relevant textbooks and materials.
	General Objective: 5.0 Understand Hire Purchase Accounts.		
5	Hire Purchase Accounts. 5.1 Describe hire purchase accounts. 5.2 Explain how the account is prepared. 5.3 Draw up worked examples.	<ul style="list-style-type: none"> ▪ Give worked examples for hire purchase. 	Relevant textbooks and materials. Balance sheets.
	General Objective: 6.0 Understand the procedure in recording goods on Sales Accounts.		
6	Goods on Sales. 6.1 Check incomplete records and control account or Goods on Return). 6.2 relate it to Estate practice.	<ul style="list-style-type: none"> ▪ Ask the students to check incomplete records and relate it to Estate Practitioners. ▪ Assess the students. 	Relevant textbooks, records.
	General Objective: 7.0 Understand Royalties and Containers.		
7 – 8	Royalties and Containers Accounts. 7.1 Explain royalties account. 7.2 Explain the containers accounts. 7.3 State their relationship. 7.4 Prepare royalties and containers accounts.	<ul style="list-style-type: none"> ▪ Lecturer should prepare examples of royalties and containers accounts. 	Relevant textbooks and materials.
	General Objective: 8.0 Understand how to prepare Branch and departmental Accounts.		
9 – 10	Branch and Departmental Accounts. 8.1 Outline the procedures in preparing branch and departmental accounts. 8.2 State their uses. 8.3 Prepare branch and departmental accounts.	<ul style="list-style-type: none"> ▪ Lecturer should be able to draw up branch and departmental accounts. 	Relevant textbooks and materials.

	General Objective: 9.0 Understand Partnership account.		
11 – 12	Partnership Accounts. 9.1 Explain partnership Accounts. 9.2 Explain how it is prepared and treated. 9.3 State the advantages and disadvantages of partnership accounts. 9.4 Prepare partnership accounts.	<ul style="list-style-type: none"> ▪ Prepare partnership accounts. 	Relevant textbooks and materials
	General Objective: Understand the preparation of Financial Statements.		
13 – 14	Preparation of Financial Statement. 10.1 Explain Financial Statement. 10.2 State the process of preparing financial statement with examples. 10.3 Prepare financial statements for an estate management organizations.	<ul style="list-style-type: none"> ▪ Prepare financial statements in relations to estate management. 	Relevant textbooks and materials.

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PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: Law of Contract and Torts		Course Code: EST I23	Contact Hours: 2-0-0
THEORETICAL CONTENT			
WEEK	General Objective: 1.0 Understand the basic principles of Nigerian Law.		
1	Specific Learning Outcomes	Teacher Activities	Resources
	Law of Contract. 1.1 Explain the law of contract. 1.2 Describe the basic formation of contract. 1.3 Explain the essentials of a valid contract. 1.4 Define the capacities of parties of contract. 1.5 Analyze the importance of each of them.	<ul style="list-style-type: none"> ▪ Teacher should give historical background of law of contract and their importance. 	Relevant textbooks, law reference materials, law cases in relation to each topics.
General Objective: 2.0 Understand mistakes and misrepresentation in contracts.			
2	Mistakes and Mis-Representation of Contract.		
	2.1 Explain the effects of mistakes on contracts. 2.2 State the different forms of mistakes. 2.3 Explain the meaning and types of misrepresentation. 2.4 State the remedies for fraudulent misrepresentation. 2.5 Cites cases in the state of operation.	<ul style="list-style-type: none"> ▪ Lecturer should give relevant examples and representation on contract. ▪ Cite relevant cases. 	Relevant textbooks and reference materials. Decided law cases.
General Objective: Understand privity of contract.			
3	Discharge of Contract.		
	3.1 Define privity of contract. 3.2 State the exception to the general rule to privity of contract. 3.3 Relate it to Estate Management.	<ul style="list-style-type: none"> ▪ Relates discharge of contract in relation to estate management practice. 	Relevant law textbooks and reference materials.

	General Objective: 4.0 Understand remedies for breach of contract.		
4	Breach of Contract. 4.1 Explain breach of contract. 4.2 State the various ways of breaching a contract. 4.3 State the remedies for breach of contract. 4.4 Relate it to Estate management practice. 4.5 Cite cases in the state of operation.	<ul style="list-style-type: none"> ▪ Give examples of breach of contracts and cite relevant cases. 	Relevant textbooks and reference materials.
	General Objectives: 5.0 Understand the discharge of contract.		
5	Discharge of Contract. 5.1 State the different ways of breach of contract. 5.2 State the effects of discharge of a contract. 5.3 Apply it to Estate Management practice. 5.4 Cite relevant cases in your state of operation.	<ul style="list-style-type: none"> ▪ Explain to the students relevant cases in discharge of contract. 	Relevant textbooks and reference materials.
	General Objective: 6.0 Understand Quashi Contract.		
6	Quashi Contract. 6.1 Explain what is meant by quashi contract. 6.2 Explain the different forms of quashi contracts. 6.3 Determine the application of each of them to Estate Management practice.	<ul style="list-style-type: none"> ▪ Give examples of Quashi contract in relation to estate practice. 	Relevant textbooks and reference materials.
	General Objective: 7.0 Understand agency and duties of Estate Agents.		
7	Duties of an Estate Agent. 7.1 Define agency. 7.2 State the authorities of an Estate Agent. 7.3 Explain the duties of an Estate Agent. 7.4 Compare the duties of an Estate to that of an Auctioneer. 7.5 Compare the duties of a qualified Estate Agent to that of QUACK. 7.6 Analyze each of them.	<ul style="list-style-type: none"> ▪ Lay more emphasis on QUACKS in the practice of Estate Surveyors. 	Relevant textbooks and reference materials.

	General Objective: 8.0 Understand the Rights and Obligations of Estate Agent.		
8	Rights and Obligations of Estate Agent. 8.1 State the rights and obligations of an Estate Agent. 8.2 Explain the relationship between the agent and the principal. 8.3 Explain the relationship between the agent and a third party. 8.4 Appraise each of their duties.	<ul style="list-style-type: none"> ▪ Give a detailed lecture on estate agent, principal and third parties. 	Relevant textbooks and reference materials.
	General Objective: 9.0 Understand termination of Agency.		
9	Termination of Agency. 9.1 Describe the different forms of termination of agency. 9.2 State their importance.	<ul style="list-style-type: none"> ▪ Lecturer should give details lecture on termination of agency and importance. 	Relevant textbooks and reference materials.
	General Objective: 10.0 Understand the Law of Torts.		
10	Law of Torts. 10.1 Define Torts and Tortuous liability. 10.2 Explain the general defences in tort. 10.3 Evaluate their implications.	<ul style="list-style-type: none"> ▪ Give comparison between torts and tortuous liability. 	Relevant textbooks and reference materials.
	General Objective: 11.0 Understand vicarious liability and joint tort liability.		
11	Vicarious Liability and Joint Tort Liability. 11.1 Define the master-servant relationship. 11.2 Explain the liability of independent contractors. 11.3 Explain the meaning of joint tort feasons.	<ul style="list-style-type: none"> ▪ Show examples of master/servant relationship in vicarious liability and joint tort liability. 	Relevant textbooks and reference materials.
	General Objective: 12.0 Understand trespass to land.		
12	Trespass to land. 12.1 Explain trespass to land. 12.2 Distinguish between trespass to person and trespass to land. 12.3 Explain the doctrine of trespass “ab initio” with reference to any relevant cases.	<ul style="list-style-type: none"> ▪ Lecture and give examples of trespass to land. ▪ Site relevant cases. ▪ Differentiate between trespass and encroachment. 	Relevant textbooks and reference materials. Decided case of trespass to land.

General Objective: 13.0 Understand Nuisance and negligence in Tort.			
13 – 15	<p>Nuisance and Negligence in Tort.</p> <p>13.1 Define public nuisance and private nuisance.</p> <p>13.2 Distinguish between nuisance and trespass.</p> <p>13.3 Describe negligence in Torts.</p> <p>13.4 Explain the doctrine of the duty of care with reference to the snail in the Gunger's Bottle Case.</p> <p>13.5 Explain contributory negligence.</p> <p>13.6 Explain the rule in the case of Rylands Vs Fletcher.</p> <p>13.7 Apply these laws in selected topics.</p> <p>13.8 Cite cases in the state of operation.</p>	<ul style="list-style-type: none"> ▪ Lecturer should revise Gunger's bottle case, Ryland Vs Fletcher and relate it to the current trend if applicable. 	<p>Visit to courts, buss for the field trip.</p>

NATIONAL BOARD FOR TECHNICAL EDUCATION, KADUNA

PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: Introduction to Valuation		Course Code: EST I24	Contact Hours: 2-1-0
THEORETICAL CONTENT			
WEEK	General Objective: 1.0 Know Valuation, a Valuer and his Functions.		
1 - 4	Specific Learning Outcomes Valuation, a Valuer and his Functions. 1.1 Define Valuation. 1.2 State the purposes of valuation e.g. <ul style="list-style-type: none"> - Sales - Purchase - Mortgage - Rating - Compensation - Company Accounts, etc. 1.3 Outline the importance of valuation in the profession. 1.4 Describe the different types of valuation. <ul style="list-style-type: none"> - Statutory valuation - Objective valuation - Subjective valuation, etc. 1.5 Provide worked examples. 1.6 Describe a valuer. 1.7 Outline the functions of valuers in relation to Estate Management.	Teacher Activities <ul style="list-style-type: none"> ▪ Lecturer should lecture and prepare work examples. 	Resources Valuation textbooks and valuation tables.

General Objective: 2.0 Understand the concepts of value in relation to real property.			
5 – 9	Concepts of Value in relation to real Property. 2.1 Explain the concepts of value. 2.2 Relate the concepts of value to: a) Economic b) Ethical Theory c) Exchange d) Utility and cost. 2.3 Provide worked examples on each of the concepts on Estate Management practice.	<ul style="list-style-type: none"> ▪ Explain the concepts of value in relation to real property and provide worked examples. 	Valuation textbooks and valuation tables.
General Objective: Understand Valuation.			
10 - 14	Valuation Methods. 3.1 Outline the valuation methods. a) Investment method b) Residual method c) Contractors method d) Comparison method e) Profits method 3.2 Differentiate between each method. 3.3 Relate the various methods in Estate Management Practice. 3.4 Provide worked examples of each method.	<ul style="list-style-type: none"> ▪ Explain various methods of valuation to the students and provide worked examples. 	Relevant valuation textbooks and materials. Valuation Table.

	General Objective: 2.0 Know the simple pen and ink sketching and colour schemes.		
4 – 7	<p>Pencil and Ink Sketching with Colour schemes.</p> <p>2.1 State the various types and grades of pens used for sketching and the factors affecting their choice.</p> <p>2.2 make different ink strokes (horizontal and vertical shapes).</p> <p>2.3 Sketch two and three-dimensional shapes using pen and ink methods.</p> <p>2.4 Express the shapes in 2.2 above using the following methods:</p> <p>i) Cross-hatching techniques.</p> <p>ii) Pointillism techniques.</p> <p>2.5 Identify approved colours used and their symbolism in design.</p> <p>2.6 Illustrate the principles of contrast and harmony in used of colour.</p> <p>2.7 State the various media for colour production in graphical works and use them on the shapes in 2.3 above e.g. water colour, poster colour, oil paint, crayons, coloured pencils, colour films etc.</p> <p>2.8 Use the media in 2.6 on the shapes in 2.2 above.</p> <p>2.9 Interpose various colours to certain effect using the media in 2.6 above.</p>	<ul style="list-style-type: none"> ▪ Show representation on the chalkboard. ▪ Illustrate on the chalkboard. 	Drawing board and materials.

	General Objective: 3.0 Know how to draw layouts.		
8 – 9	<p>Essential of Drawing.</p> <p>3.1 Identify the different scales used in drawings.</p> <p>3.2 Describe various symbols used in drawing e.g. residential apartment, church, bridge highway, dam and waterways, Military Zone Doors, windows, staircases, dinning, wardrobe etc in building design.</p> <p>3.3 Use colours to show areas of different land use i.e. Residential, Commercial, Roads, Schools, Rail lines, Agriculture/Open space, Industrial, Sea Ports.</p> <p>3.4 Prepare building layout.</p> <p>3.5 Prepare layout of utilities and services using the following:</p> <ul style="list-style-type: none"> - Telephone lines - Electricity line - Gas lines - Water works lines, Incinerators etc. 	<ul style="list-style-type: none"> ▪ Show representation of different scales, symbols, colours. 	Drawing boards and materials.
	General Objective: 4.0 Know how to design simple residential buildings.		
10 – 12	<p>Design Simple Residential Building.</p> <p>4.1 Produce a residential layout.</p> <p>4.2 Design residential buildings with concepts of floor area ratio or floor space-index.</p> <p>4.3 Design small residential buildings of a given density.</p>	<ul style="list-style-type: none"> ▪ Show a representation of residential layout. 	Residential drawing, studio, marker drawing board and drawing instruments.
	General Objective: 5.0 Know building regulations and codes.		
13 – 15	<p>Building regulations and Codes.</p> <p>5.1 Interpret the standards and specifications of a building design.</p> <p>5.2 Determine the operations of building and code.</p> <p>5.3 Use simple examples in your state of operations.</p>	<ul style="list-style-type: none"> ▪ Present various building design codes. ▪ Engage students on drawings. ▪ Supervise students drawing. ▪ Tracing of drawings. 	Residential drawing, studio, marker drawing board and drawing instruments.

NATIONAL BOARD FOR TECHNICAL EDUCATION, KADUNA

PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: Building Construction I		Course Code: BLD 103	Contact Hours: 2-0-3
THEORETICAL CONTENT			
WEEK	General Objective: 1.0 Know the various building components and their functional requirements.		
	Specific Learning Outcomes	Teacher Activities	Resources
1	1.1 Explain the term building components. 1.2 Enumerate the building components e.g. foundation, floor, wall, ceiling, roof, fenestrations, doors, windows etc. 1.3 Identify the different requirements of building components. 1.4 Sketch these various building components.	<ul style="list-style-type: none"> ▪ Use the existing classrooms to show the students the various building components. ▪ Use question and answer to discuss the different requirements of building components. ▪ Make students to carry out good sketches. 	Chalkboard, chalk.
	General Objective: 2.0 Understand the preliminaries involved in the construction of a building.		
2 – 4	2.1 List the site activities which proceed the actual building construction. 2.2 Explain the importance for the provision of the following facilities on site: temporary services, roads, materials storage accommodation, site sheets and offices. 2.3 Analyze factors to be considered in site organization and layout. 2.4 Describe the process of setting out a building using the following: 3,4,5, method, builders square method, theodolite method.	<ul style="list-style-type: none"> ▪ Use question and answer to discuss preliminary site activities. ▪ Involve the students in explaining the importance of the preliminary site activities. ▪ Demonstrate with appropriate instruments. ▪ Sketches to explain the need for good site organization and layout. ▪ Discuss each method with sketches. ▪ Demonstrate each method of setting out practically. 	Chalkboard, Measuring tape, Builders square, Theodolite, Pegs.

General Objective: 3.0 Understand the general principles of selecting and preparing sites to receive various types of foundation.			
5	3.1 Explain the methods of excavation. 3.2 List tools used in manual method of excavation. 3.3 Describe the principal equipments used in excavation.	<ul style="list-style-type: none"> ▪ Discuss the methods of excavation. ▪ Show the students the various manual excavation tools. 	Chalkboard, shovel, spade etc.
6	3.4 Explain with sketches the different methods of earthwork support to trenches in different types of soil.	<ul style="list-style-type: none"> ▪ Make students to carry out good sketches of earthwork supports. 	Drawing paper and instruments.
7 – 9	3.5 Define the terms foundation. 3.6 Explain the importance of foundation to building structure. 3.7 List the various types of soils and how they affect choice of foundation. 3.8 Illustrate by simple calculation the area of concrete foundation.	<ul style="list-style-type: none"> ▪ Use question and answer to discuss the importance of foundation. ▪ Students be made to participate in the calculation process. ▪ Use question and answer to explain the types of foundation. 	
10 – 11	3.9 Describe the different types of foundations and their applications. 3.10 Illustrate simple methods of reinforcement in foundations grounds beams, sheet piles, bearing piles etc. 3.11 Explain the methods of construction of the various types of foundations.	<ul style="list-style-type: none"> ▪ Use question and answer types of foundation to assess students. 	Chalkboard, chalk.

NATIONAL BOARD FOR TECHNICAL EDUCATION, KADUNA

PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: Principles of Valuation I		Course Code: EST 211	Contact Hours: 2-0-0
THEORETICAL CONTENT			
WEEK	General Objective: 1.0 Understand Property Market.		
1 – 4	Specific Learning Outcomes	Teacher Activities	Resources
	<p>Property Market</p> <p>1.1 Explain the concepts of property market.</p> <p>1.2 Explain the different types of property markets.</p> <p style="padding-left: 20px;">a) Residential</p> <p style="padding-left: 20px;">b) Industrial</p> <p style="padding-left: 20px;">c) Commercial etc.</p> <p>1.3 Explain the factors that influence property market functions:</p> <p style="padding-left: 20px;">a) Location</p> <p style="padding-left: 20px;">b) Time</p> <p style="padding-left: 20px;">c) Supply and Demand etc</p> <p>1.4 Apply these concepts to property market conditions.</p> <p>1.5 Carry out case studies of property market in your state of operation.</p>	<ul style="list-style-type: none"> ▪ Lecturer should give a detailed outline of principles of valuation. 	<p>Relevant textbooks on valuation, valuation table, reference materials, periodicals, journals, measuring tapes, calculators and selected case studies.</p>

General Objectives 2.0 Understand land and property as an Investment			
5 - 8	Land and Landed Property as an Investment 2.1 Explain land and landed property. 2.2 Explain the difference between land and landed property. 2.3 Define Investment. 2.4 Explain the various types of investment. 2.5 Explain the various types of landed property investment. 2.6 Outline the advantages and disadvantages in landed property investment. a) Advantages: i) security of income ii) regular flow of income, etc b) Disadvantages: i) size of capital outlay ii) Government regulations, etc 2.7 Relate them to valuation practice.	<ul style="list-style-type: none"> ▪ Lecturer should appraise selected case studies on the state of operation. 	Chalkboard, chalk, relevant textbooks, journals and periodicals.
General Objectives: 3.0 Understand Economic Return to Land and Property			
9-11	Economic Returns to Landed Property 3.1 Explain economic return. 3.2 Relate economic returns to landed property. 3.3 Define rents. 3.4 Determine the factors influencing rents on i) Demand ii) Supply 3.5 Determine rental values. 3.6 Provide worked examples.	<ul style="list-style-type: none"> ▪ Produce calculation on demand and supply and relate it as its affects rent. 	Chalkboard, chalk, relevant textbooks, journals and periodicals.

General Objectives: 4.0 Understand the Principal Types of Interest in Land			
12-14	<p>The types of Interests in Land</p> <p>4.1 Define interest in land.</p> <p>4.2 Outline the principal types of interest in land.</p> <p>4.3 State the differences between each interest in relation to their importance.</p> <p>4.4 Visit some existing properties and identify interests on each of them.</p> <p>4.5 Explain the implications of each interest in valuation.</p> <p>4.6 Provide worked examples.</p>	<ul style="list-style-type: none"> ▪ Undertake visit of selected properties and identify interests in land. ▪ Provide worked examples. 	Vehicles, properties fields.

NATIONAL BOARD FOR TECHNICAL EDUCATION, KADUNA

PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: Land Law 1		Course Code: EST 212	Contact Hours: 2-0-0
THEORETICAL CONTENT			
WEEK	General Objective: 1.0 Understand the Nigerian Land Law.		
1 – 4	Specific Learning Outcomes	Teacher Activities	Resources
	Nigerian Land Law 1.1 Define the legal concept of land. 1.2 Stat the evolution of English and Nigerian Land Law. 1.3 Explain the notion of servitude and right in Common Law and Nigerian Law. 1.4 Relate each law to Estate Management practice.	<ul style="list-style-type: none"> ▪ Give an overview of the Nigerian Land Law with example in relation to estates, occupancy of land, law of trust and land registration. 	Relevant Law textbooks, Journals, Periodicals, Selected cases of land and cases on arbitration..
	General Objective: 2.0 Understand the doctrine of Estates.		
4-5	Doctrine of Estates 2.1 Define the concept of Estate. 2.2 Outline the types of Estates. 2.3 Describe the types of Estates in land with reference to Nigerian Land Law. 2.4 Evaluate each type of Estate.	<ul style="list-style-type: none"> ▪ Lecturer should give examples on types of Estates in land with reference to Nigerian Law. 	Relevant law books, journals, periodicals.

General Objective: 5.0 Understand the procedure for land registration in Nigeria.			
13-14	<p>Land Registration 5.1 Explain the functions and importance of land registration. 5.2 State the procedure for registration of land in Nigeria. 5.3 Explain the advantages of registration of land in Nigeria.</p> <p>Field Trip 5.4 Visit land registry in your state of operation. 5.5 Undertake visits to courts and estates. 5.6 Apply the laws relating to land. 5.7 Cite cases in the state of operation.</p>	<ul style="list-style-type: none"> ▪ Undertake visit to court to understand their operation in relation to land. ▪ Visit Federal Ministry of Works and Housing (Lands) 	<p>Vehicles, Video Tapes</p> <p>Decided land law cases.</p>

NATIONAL BOARD FOR TECHNICAL EDUCATION, KADUNA

PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: Introduction to Property Development		Course Code: EST 213	Contact Hours: 2-0-0
THEORETICAL CONTENT			
WEEK	General Objective: 1.0 Understand Property Development.		
1 – 3	Specific Learning Outcomes Property Development 1.1 Define property development. 1.2 Outline various professions involved in property development. 1.3 Evaluate their roles. 1.4 Explain development process. 1.5 Identify sources of funds for property development. 1.6 Apply them to Estate Management practice.	Teacher Activities <ul style="list-style-type: none"> ▪ Explain the process of property development and the roles of professionals. 	Resources Relevant textbooks on property development and journals.
	General Objective: 2.0 Understand Estate Planning.		
4 - 6	2.1 Define an Estate plan. 2.2 Explain different types of Estate plans. 2.3 Interpret each type of plan. 2.4 Produce an Estate plan.	<ul style="list-style-type: none"> ▪ Explain types of estate planning, and estate controls. 	Relevant textbooks and journals.
	General Objective: 3.0 Understand Estate Control.		
7 - 8	3.1 Define Estate Control. 3.2 Explain the various Estate Controls. 3.3 State each of their importance. 3.4 Explain the aim of management control. 3.5 Outline the types of management controls and how they attest property management. 3.6 Undertake Estate control in the state of operation.	<ul style="list-style-type: none"> ▪ Lecturer should ask the students to undertake Estate Control in the state of operation. 	Relevant textbooks and journals.

	General Objective: 4.0 Know the organizational structure of an Estate.		
9 - 11	<p>4.1 Define an organizational structure of an Estate.</p> <p>4.2 Determine how organizational structure affects management.</p> <p>4.3 Explain the aims and objectives of Estate organization.</p> <p>4.4 Apply them to Estate Management practice.</p>	<ul style="list-style-type: none"> ▪ Illustrate and explain organizational structure of an Estate and its aims and objectives. 	Relevant textbooks, chalk, chalkboard.
	General Objective: 5.0 Know the various stages of life cycle of an Estate.		
12-14	<p>Stages of life cycle of an Estate.</p> <p>5.1 Explain the meaning of a life cycle.</p> <p>5.2 Explain the different stages in the life cycle of an Estate.</p> <p>5.3 Evaluate each type of life cycle of an Estate.</p> <p>5.4 Carry out case studies of Estate life cycles in your state of operation.</p> <p>Field trip</p> <p>5.5 Undertake visits to housing corporations and housing estates.</p> <p>5.6 Observe their roles and functions.</p> <p>5.7 Present a written report.</p>	<p>i) Explain stages of life cycle in an Estate.</p> <p>ii) Undertake visit to Estate to observe their roles and functions.</p>	Relevant textbooks, chalk chalkboard, vehicle housing estate and corporations.

NATIONAL BOARD FOR TECHNICAL EDUCATION, KADUNA

PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: Rural Land Use Economics		Course Code: EST 214	Contact Hours: 2-0-0
THEORETICAL CONTENT			
WEEK	General Objective: 1.0 Understand Land-Man Relationship.		
1 – 3	Specific Learning Outcomes Land-Man Relationship 1.1 Define Land economics. 1.2 Explain the scope and nature of land Economics 1.3 Determine land use in relation to human activities. 1.4 State their merits and demerits.	Teacher Activities ▪ Lecture and give an overview study of Rural Land in Nigeria and compare it with some state in Nigeria.	Resources Relevant textbooks in Rural Land use Economics, Periodicals and Case Study.
	General Objective: 2.0 Understand rural Land Tenure System.		
4 - 6	Rural Land Tenure System 2.1 Define Rural Land. 2.2 Explain the relationship between custom and rural land use structure. 2.3 Determine their effects on development.	▪ Show the determinants of economic of scale in the use of rural land.	Chalkboard, chalk, relevant textbooks.
	General Objective: 3.0 Understand economy in the use of Rural Land.		
7 - 10	Economy in the use of Rural Land 3.1 Explain the fragmentation and size of farm units. 3.2 Explain the statutory impact on size of farm unit. 3.3 Determined the economy of scale of farm unit. 3.4 Explain farm input and output relationship. 3.5 Illustrate with charts.	▪ Supervise students in selected rural land economics in selected area.	Selected rural setting, charts.

	General Objective: 4.0 Understand Agrarian Reform.		
11 - 12	<p>Agrarian Reform 4.1 Define Agrarian reform. 4.2 Explain economic basis for reform. 4.3 Apply them in the State of operation.</p> <p>Field Trip 4.4 Carry out case studies in Rural Land Use Economics of a selected area.</p>	<ul style="list-style-type: none"> ▪ Illustrate the relationship of farm inputs and outputs in a given area. 	<p>Visit library to collect resource materials on already developed case studies.</p>
	General Objective: 5.0 Know the Agriculture and Forestry.		
13 - 14	<p>Agricultural and Forestry 5.1 Define agriculture. 5.2 Determine the factors influencing agricultural yield. 5.3 Identify various agricultural products (arable tree and plantation) and their life span. 5.4 Define forestry. 5.5 Identify some forestry organizations in Nigeria. 5.6 Describe various types of tree species, their distribution, demand and supply, e.t.c. 5.7 Carry out enumeration of crops and economic tree. 5.8 Visit forest resource or farm resource and their operating ministry.</p>	<ul style="list-style-type: none"> ▪ Ask the students to identify: <ul style="list-style-type: none"> - various agricultural products and their life span. - some forestry organizations in Nigeria. ▪ Ask the students to carry out enumeration of crops and economic tree. ▪ Visit forest resource or farm resource. 	<p>Forest, farm and their operating ministry vehicle for trip.</p> <p>FMAF publications</p>

NATIONAL BOARD FOR TECHNICAL EDUCATION, KADUNA

PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: Property Taxation		Course Code: EST 215	Contact Hours: 2-0-0
THEORETICAL CONTENT			
WEEK	General Objective: 1.0 Understand Taxation as a Planning Tool.		
1 – 5	Specific Learning Outcomes	Teacher Activities	Resources
	Taxation as a planning tool 1.1 Explain the principles of taxation. 1.2 Outline the various types of property tax. 1.3 State the effects of property tax on physical planning. 1.4 Explain the characteristics of land which make it convenient to levy taxes on it.	<ul style="list-style-type: none"> ▪ Outline various property taxes and their characteristics. <ul style="list-style-type: none"> i) Necessary tools use. ii) Prepare property taxable or schedules. 	Relevant textbooks in property taxation, reference materials, already prepared tax schedules in the state. Federal Ministry of Internal Revenue Books.
	General Objective: 2.0 Understand property tax in Nigeria.		
6 - 8	Property Tax 2.1 Outline the various property tax laws. 2.2 Explain the need for property tax. 2.3 Outline various types of property taxes in your state of operation. 2.4 Prepare a typical property tax in the state of operation.	Ditto	Relevant textbooks on property taxation and reference materials.

9 - 14	General Objective: 3.0 Understand tax administration in Nigeria.		
	<p>Tax Administration 3.1 Identify taxes levied at various tiers of government. 3.2 Explain the various methods of assessment of their taxes. 3.3 State modes of collection, sanctions for default and appeal machinery. 3.4 Appraise the tax administration in the state of operation.</p> <p>Field Trip 3.5 Undertake visits to tax offices. 3.6 Participate in property taxation exercise or scheme. 3.7 Prepare a write up in property tax relating to the State of operation.</p>	<ul style="list-style-type: none"> i) Outline mode of collection of taxes, sanctions for default and appeal machinery. ii) Conduct visit to tax offices to understand their operation. iii) Ask student to write reports on tax office. 	<p>Relevant books on Tax Administration.</p> <ul style="list-style-type: none"> - Vehicles. - Balance sheets on taxation.

NATIONAL BOARD FOR TECHNICAL EDUCATION, KADUNA

PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: Building Construction II		Course Code: EST 104	Contact Hours: 2-0-3
THEORETICAL CONTENT			
WEEK	General Objective: 1.0 Understand Building Materials.		
1 – 2	Specific Learning Outcomes	Teacher Activities	Resources
	1.1 Explain the chemical building materials. 1.2 Describe the manufacturing and uses of asbestos and asbestos products. 1.3 Know the manufacturing processes and uses of building construction materials e.g. stones, clay, lime mortars, cement concrete, aggregates, irons, steel e.t.c.	<ul style="list-style-type: none"> ▪ Show the students sample of adhesive, asbestos roofing sheets, ceiling boards. ▪ Show example of conductors like metal, water e.t.c. ▪ List some basic building materials like stone, sand, different types of cement if possible, take students to nearby quarrying pits. ▪ Show them various sizes of stones, clay products roofing tiles. 	Textbook, laboratory, vehicles.
	General Objective: 2.0 Know the different types of floors.		
3 - 4	2.1 State the functions of floors. 2.2 Enumerate the various types of ground floors. 2.3 Explain the methods of constructing the various types of floors. 2.4 Draw the various types of floors. 2.5 Explain with drawings the methods of constructing timber floors. 2.6 Enumerate the various types of suspended floors. 2.7 State the methods of constructing suspended floor. 2.8 Draw the various type of suspended floors. 2.9 State the materials for these types of floors. 2.10 State the differences between ground floors and suspended floors.	<ul style="list-style-type: none"> ▪ Use question and answer to discuss the types of ground floors. ▪ Demonstrate with appropriate sketches. ▪ Make students to carry out good sketches. ▪ Use question and answer to discuss suspended floors. 	Chalkboard, blackboard, drawing boards.

	3.0 Understand masonry wall construction.		
5	<p>3.1 State the function of walls.</p> <p>3.2 List the various types of walls in use e.g. load bearing, non-load bearing etc.</p> <p>3.3 Explain with drawing the methods of constructing these various types of walls.</p> <p>3.4 Enumerate the materials used in wall construction.</p> <p>3.5 Illustrate with drawings the various block wall constructions.</p>	<ul style="list-style-type: none"> ▪ Use question and answer to discuss wall. ▪ Demonstrate with sketches. 	Chalkboard
6	<p>3.6 Enumerate the materials used in wall construction.</p> <p>3.7 Illustrate with drawings the various block wall constructions.</p>	<ul style="list-style-type: none"> ▪ Carry out neat sketches 	Chalkboard Drawing board Drawing instruments
7	<p>3.8 Define partition walling.</p> <p>3.9 State the functions of partition walls.</p> <p>3.10 Enumerate the various types of partition walls.</p> <p>3.11 Illustrate with sketches how partition walls are constructed.</p>	<ul style="list-style-type: none"> ▪ Demonstrate with sketches 	Chalkboard, Chalk, Drawing Studio
8	<p>3.12 Explain the merits and demerits of the various types of partition walls.</p> <p>3.13 Draw a typical timber partition wall using timber frame.</p>	<ul style="list-style-type: none"> ▪ Demonstrate with sketches 	Chalkboard, Chalk, Drawing Studio
General Objective: 4.0 Staircases			
9	<p>4.1 Draw the various types of staircases in plan, elevations and sections.</p> <p>4.2 List the various types of staircases.</p> <p>4.3 Define the terminologies used in staircase construction.</p>	<ul style="list-style-type: none"> ▪ Use question and answer to discuss types of staircases. 	Chalkboard, Chalk
10	<p>4.4 Draw the various types of staircases in plan, elevations and sections.</p> <p>4.5 Derive risers, tread sizes, width of flight, width of mid-landing, etc for the various types of staircases listed in 4.2.</p>	<ul style="list-style-type: none"> ▪ Demonstrate with sketches 	Chalkboard, Chalk, Drawing Studio

11	4.6 Describe with the aid of sketches and according to building regulation requirements, the method of constructing various types of staircases in timber, steel and reinforced concrete.	▪ Demonstrate with sketches	Chalkboard, Chalk, Drawing Studio
General Objective: 5.0 Know the types of roofs and ceiling structures and coverings.			
12	5.1 Explain with illustration the methods of construction of various roof structures in timber, concrete and steel. 5.2 State the properties and fixing details of various roof covering.	▪ Demonstrate with sketches	Chalkboard, Chalk
13	5.3 Explain with illustration, the drainage systems of the various types of roofs. 5.4 Describe with drawings the water proofing systems of the various types of roofs.	▪	
14	5.5 Enumerate the various types of ceilings. 5.6 State the functions of these types of ceilings. 5.7 Explain the methods of constructing the ceilings in 455.	▪	

ASSESSMENT: Coursework: 20%, Course Test” 20%, Practical: 0%, Examination: 60%.

COMPETENCY: The student should be familiar with the various components of a building.

REFERENCES: 1. R. Chudley “Construction Technology” Volume 1-4 Longman

NATIONAL BOARD FOR TECHNICAL EDUCATION, KADUNA

PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: Principles of Valuation II		Course Code: EST 221	Contact Hours: 2-0-0
THEORETICAL CONTENT			
WEEK	General Objective: 1.0 Understand terms in use in valuation.		
1 – 5	Specific Learning Outcomes	Teacher Activities	Resources
	<p>Terms in use in Valuation</p> <p>1.1 Explain the terms in use</p> <ul style="list-style-type: none"> - Rental value - Income - Outgoing - Virtual rent - Premiums - Risk rate of Returns on Capital etc. <p>1.2 State the differences between each of them in relation to their importance.</p> <p>1.3 Apply each terms to valuation.</p>	<ul style="list-style-type: none"> ▪ Provide an indept discussion of terms use in valuation. ▪ Give various calculations on valuation. ▪ Give students graded assignments on selected topics and work appropriately. 	Valuation textbooks, valuation table, calculators, measuring tapes etc.
	General Objective: 2.0 Understand the concepts of valuation table.		
– 9	<p>Valuation Table</p> <p>2.1 Explain valuation table.</p> <p>2.2 State the various types of valuation tables in relation to their uses.</p> <p>2.3 Define Y. P.</p> <p>2.4 Derive Y. P. without using valuation tables.</p>	<ul style="list-style-type: none"> ▪ Provide a valuation table and ask students to use it. 	Valuation textbooks, tables calculators e.t.c.
	General Objective: 3.0 Understand the principles governing yields from investments.		

10 - 15	<p>The Principles governing yields from investment.</p> <p>3.1 Define yields.</p> <p>3.2 State the different types of yields.</p> <p>3.3 Explain the factors influencing each yield from investment.</p> <p>3.4 Apply the principles of yields from investment.</p> <p>3.5 Carry out exercises on related topics.</p>	<ul style="list-style-type: none"> ▪ Ask the students to carry out exercises on yields own investment. ▪ Assess the students. 	Relevant textbooks and materials.
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NATIONAL BOARD FOR TECHNICAL EDUCATION, KADUNA

PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: Land Law II		Course Code: EST 222	Contact Hours: 2-0-0
THEORETICAL CONTENT			
WEEK	General Objective: 1.0 Understand the concepts of lease, sub-lease and assignments.		
1 – 2	Specific Learning Outcomes	Teacher Activities	Resources
	Leases 1.1 Define a lease. 1.2 Explain the creation of leases. 1.3 Describe the different types of leases. 1.4 State the terms and conditions of a lease. 1.5 Apply these conditions to Estate Management practice. 1.6 Cite cases in the state of operation.	<ul style="list-style-type: none"> ▪ Explain concepts of lease, sub-lease, assignments, right in land, covenant and land tenure. 	Relevant law textbooks, journals, periodicals, selected cases on land, and cases on arbitration.
	General Objective: 2.0 Understand other rights in land.		
3 - 4	Rights in Land. 2.1 Outline other rights in land. 2.2 Explain each of these rights. 2.3 Evaluate each right. 2.4 Cite cases in the state of operation.	<ul style="list-style-type: none"> ▪ Explain to the students all aspects of rights in land. 	Relevant textbooks and materials.
	General Objective: 3.0 Understand the concept of covenant.		
5	Concept of Covenant 3.1 Define covenant 3.2 Explain the different types of covenants. 3.3 Apply these concepts to government land. 3.4 Cite cases in the state of operation.	<ul style="list-style-type: none"> ▪ Explain to the students various issues on Tenancy. 	Textbooks on tenancy periodicals and journals.

6 - 7	General Objective: 4.0 Understand the criteria and determination.		
	<p>4.1 Define Tenancy</p> <p>4.2 Explain the conditions for the creation of Tenancy.</p> <p>4.3 Explain controlled and regulated Tenancy.</p> <p>4.4 Explain the various ways of terminating tenancies.</p> <p>4.5 Undertake the creation and determination of tenancy in the state of operation.</p> <p>4.6 Cite cases in each case.</p>	<ul style="list-style-type: none"> ▪ Explain to the students various issues on tenancy. 	Textbooks on tenancy periodicals and journals.
	General Objective: 5.0 Understand the Edicts.		
8 - 9	<p>Edicts</p> <p>5.1 Explain Rent Edicts.</p> <p>5.2 Appraise the State Edicts.</p> <p>5.3 Describe the application of these Edicts.</p> <p>5.4 State the functions of the Rent Tribunal.</p> <p>5.5 Apply these Edicts in State of operation.</p> <p>5.6 Cite cases in each case.</p>	<ul style="list-style-type: none"> ▪ Ask students to appraise the state Edicts and apply those Edicts in state of operations. 	Relevant textbooks, journals and periodicals copies of Edicts.
10-12	General Objective: 6.0 Understands the Land Tenure System in Nigeria before the Land Use Decree of 1978.		
	<p>Land Tenure</p> <p>6.1 Outline various Land Tenure Systems in Nigeria before 1978.</p> <p>6.2 State the effects of the Land Use Act 1978 on the Land Tenure System.</p>	<ul style="list-style-type: none"> ▪ Ask students to identify effects of land use act 1976 on land Tenure system. 	Relevant textbooks, periodicals and journals.

13-15	<p>Land Use Act.</p> <p>7.1 Explain the purpose of the Land Use Act.</p> <p>7.2 Explain the importance of Land Use Act.</p> <p>7.3 State the rights of the individual under the Land Use Act.</p> <p>7.4 Explain the powers of the governors under the Use Land Act.</p> <p>7.5 Analyze its powers and limitations.</p> <p>7.6 Cite case in the state of operation.</p> <p>7.7 Undertake visits to courts and estates.</p> <p>7.8 Apply the laws in relation to Landlord and Tenant to estate.</p>	<ul style="list-style-type: none"> ▪ Undertake visit to court and understudy their operation in relation to Land Use Act. ▪ Visit Federal Ministry of Works and Housing. 	Vehicles, Videotapes, Land Use Act.
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NATIONAL BOARD FOR TECHNICAL EDUCATION, KADUNA

PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: Introduction to Property Management		Course Code: EST 223	Contact Hours: 2-0-0
THEORETICAL CONTENT			
WEEK	General Objective: 1.0 Understand Property Management.		
1 – 2	Specific Learning Outcomes Property Management 1.1 Define property management. 1.2 Explain the different types of properties that can be managed by an Estate Surveyor and Valuer. 1.3 Explain the functions of Estate Surveyor and Valuers in the management of the various types of properties. 1.4 Explain the problems associated with the management of these types of properties. 1.5 Analyze each type of problem on properties.	Teacher Activities <ul style="list-style-type: none"> ▪ Explain the functions, types and problems of property management. ▪ Give assignments. 	Resources Relevant law textbooks in property management, Journal, Book materials periodicals, Audio visual tapes.
3 – 4	General Objective 2.0 Understand the Preparation of Report to Clients.		
	Preparation of Management Report to clients. 2.1 Define Management Reports. 2.2 Explain how management report is prepared. 2.3 Prepare a management report to a typical client.	<ul style="list-style-type: none"> ▪ Lecture students on preparation of management report. ▪ Give assignments. 	Relevant textbooks in management, books and materials.
5 -7	General Objective 3.0: Know the main factors influencing the use and management of Estate.		
	Factors Influencing the Use and Management of Estate: 3.1 Outline the different features of Estates: <ul style="list-style-type: none"> i) Physical identity ii) Economic Condition iii) Legal Status iv) Management Character 	<ul style="list-style-type: none"> ▪ Explain the features of estates. ▪ Give assignments. 	Relevant textbook in management of Estate, Journals and periodicals.

	General Objective: 4.0 Understand the difference between Management of Public and Private Estates.		
8 – 10	Different between Management of Public and Private Estate: 4.1 Distinguish between private and public estates. 4.2 Explain the goals in private and public property management. 4.3 Describe management functions associated with private and public properties. 4.4 Appraise each function. 4.5 Carry out relevant case studies in your state of operation.	<ul style="list-style-type: none"> ▪ Lecture and enumerate the differences between public land private estate. ▪ Give assignment. 	Relevant textbooks, journals and materials.
	General Objective: 5.0 Understand the Relationship between Landlord and Tenant.		
11-12	Landlord-Tenant Relationship: 5.1 Explain the criteria for selection of Tenants. 5.2 Explain the duties and obligations of the landlord and tenant. 5.3 Determine the effects of good landlord and tenant relationship. 5.4 Cite cases of landlord and tenant in your state of operation.	<ul style="list-style-type: none"> ▪ Explain the relationship between landlord and tenant. 	Relevant textbooks, journals and materials.
	General Objective: 6.0 Understand Estate Records.		
13 – 15	Estate Records: 6.1 Define Estate Records 6.2 Explain the principal types of Estate Records. 6.3 State the importance of each. 6.4 Keep Estate Records. Field Trip: 6.5 Undertake a visit to Housing Corporations and Housing Estates. 6.6 Observe their roles and functions. 6.7 Carry out a case study on selected topics on property management.	<ul style="list-style-type: none"> ▪ Explain types of Estate records. ▪ Visit Housing corporations and Estates. ▪ Make a case study on property management. Estate Records, Housing corporation.	

NATIONAL BOARD FOR TECHNICAL EDUCATION, KADUNA

PROGRAMME: NATIONAL DIPLOMA IN ESTATE MANAGEMENT			
COURSE: Urban Land Use Economics		Course Code: EST 224	Contact Hours: 2-0-0
THEORETICAL CONTENT			
WEEK	General Objective: 1.0 Understand the difference between Land Use and Value.		
	Specific Learning Outcomes	Teacher Activities	Resources
1 – 4	<p>Land Use and Land Value</p> <p>1.1 State the difference between Land Use and Land Value.</p> <p>1.2 Explain why land in various locations have different values.</p> <p>1.3 Explain compatibility and incompatibility in Land Use.</p> <p>1.4 Apply them on Estate Management practice.</p>	<ul style="list-style-type: none"> ▪ Lecture and give an over view study of Urban Land is in Nigeria and compare it with some states in Nigeria. 	Relevant textbooks in Urban Land Use Economics, Periodicals, and case study.
	General Objective: 2.0 Understand demand for Urban Land.		
5– 8	<p>Demand for Urban Land</p> <p>2.1 Outline the reasons for demand for land.</p> <p>2.2 State the various uses of land.</p> <p>2.3 Determine the effect of population in the use of land.</p> <p>2.4 Determine the effect of the demand for Urban and other resources.</p> <p>2.5 apply them to Estate Management practice.</p>	<ul style="list-style-type: none"> ▪ Show the determinants in the economics of scale in the use of urban land. 	Relevant textbooks in urban land use, economics, periodicals and case study.

	General Objective: 3.0 Understand supply of Urban Land.		
9 - 12	Supply of Urban Land 3.1 Outline how urban land can be increased. 3.2 Explain the allocation of Urban Land to various uses. 3.3 Illustrate with charts the relationship between Demand and supply on Urban Lands. 3.4 Apply both factors to Estate Management practice.	<ul style="list-style-type: none"> ▪ Supervise students in selected urban land economics in selected areas. 	Relevant textbooks in urban land use, economics, periodicals and case study.
13 - 15	Statutory and Technological Impact in Urban Land Use Allocation.		
	Statutory and Technological Impact in Urban Land Use Allocation. 4.1 Outline the various statutes that affect urban land use. 4.2 Determine the effects of technology on Urban Land Use. 4.3 Appraise both factors on Urban Land use Allocation.	<ul style="list-style-type: none"> ▪ Explain the statutes that affect Urban Land Use. 	Visit library to collect resource material from already developed case study.

NATIONAL BOARD FOR TECHNICAL EDUCATION, KADUNA

PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: Principles of Property Rating		Course Code: EST 225	Contact Hours: 2-0-0
THEORETICAL CONTENT			
WEEK	General Objective: 1.0 Understand the historical evolution of property rating in Nigeria.		
1 – 3	Specific Learning Outcomes	Teacher Activities	Resources
	The Historical Evaluation of Property Rating in Nigeria. 1.1 Trace the historical development of rating. 1.2 Explain the existing property rating systems in Nigeria. 1.3 Appraise property rating as a source of revenue for Local Government in Nigeria.	<ul style="list-style-type: none"> ▪ Give historical background of property rating in Nigeria. 	Relevant textbooks on property rating in Nigeria, periodicals, journals, and case study.
General Objectives: 2.0 Understand the terms in use.			
4 – 6	Terminologies 2.1 Explain the terms gross value, rateable value, net annual value and assessed value. 2.2 State the importance of each of the terms. 2.3 Explain the term hereditatmaent, rebus sic stantibus etc.	<ul style="list-style-type: none"> ▪ Explain to students gross value, reteable value, assessed value, etc. 	Relevant textbooks, periodicals, journals and case study.
7 – 9	General Objective: 3.0 Understand the rating process.		
	The Rating Process 3.1 Explain property identification and enumeration. 3.2 Relate property valuation to rate assessment. 3.3 Prepare a valuation list. 3.4 State objections and amendments.	<ul style="list-style-type: none"> ▪ Explain and distinguish the rating process with worked examples. 	Relevant textbooks, periodicals and journals.

	General Objective: 4.0 Understand exemptions and Reliefs.		
10-12	Exemption and Reliefs 4.1 Explain statutory reliefs and exemptions. 4.2 Explain other reliefs and exemptions. 4.3 State their importance. 4.4 Apply them to Estate Management practice.	<ul style="list-style-type: none"> ▪ Explain to students exemptions and reliefs as its apply to Estate Management. 	Relevant textbooks, periodicals and journals.
	General Objective: 5.0 Understand Rating Administration.		
13 - 14	Rating Administration 5.1 Define Precepting Authority and Rating Authority. 5.2 Explain modes of rates collection and sanctions for default. 5.3 Describe use and abuse of rate revenue. 5.4 Explain rating administration. Field Trip 5.5 Undertake visits to property rating offices. 5.6 Participate in property rating exercises. 5.7 Present a Report.	<ul style="list-style-type: none"> ▪ Explain to students rating administration. ▪ Carry out case studies in rating administration. 	Relevant textbooks, periodicals and journals, vehicles, property rating office.

BUILDING SERVICES AND MAINTENANCE COURSES

NATIONAL BOARD FOR TECHNICAL EDUCATION, KADUNA

PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: Building Service & Maintenance		Course Code: EST 226	Contact Hours: 2-0-1
THEORETICAL CONTENT			
WEEK	General Objective: 1.0 Know the sources, quality and classification of water.		
	Specific Learning Outcomes	Teacher Activities	Resources
1	Sources of Water 1.1 Identify sources of water. 1.2 State the quality of water from the sources in 1.1. 1.3 State the two classes of water, viz hard and soft water. 1.4 Describe the methods of purification of water.	<ul style="list-style-type: none"> ▪ Introduce course to students. ▪ Explain sources of water. ▪ Differentiate between hard and soft water. ▪ Describe methods of purifying water. 	Chalkboard, chalk, duster, Books on Water Supply and water treatments.
	General Objective: 2.0 Know the system of distribution of pipe-work for domestic cold water supply.		
2	Cold Water Supply Systems 2.1 Illustrate the direct and indirect method of water supply. 2.2 Identify the sizes and types of pipes used along the distribution system. 2.3 Describe with sketches cold water supply system. 2.4 Describe means of providing drinking water. 2.5 Differentiate between communication, service, supply, distribution and overflow pipes.	<ul style="list-style-type: none"> ▪ Discuss pipe sizing and types. ▪ Explain and illustrate the direct and indirect methods of water supply. 	Chalk board, Chalk, Duster.

3	General Objective: 3.0 Understand hot water supply system. Hot Water Supply Systems		
	<p>3.1 State the two system of hot water supply.</p> <p>3.2 Describe direct and indirect systems of hot water supply.</p> <p>3.3 Identify need for sizing of pipes and precaution against dead leg.</p>	<ul style="list-style-type: none"> ▪ Describe and illustrate hot water supply system. ▪ Show and sketch hot water supply system. 	Books water supply and water treatment.
General Objectives: 4.0 Know the basic sanitary appliances fittings and their uses.			
4	<p>Sanitary appliances fittings</p> <p>4.1 Identify the following appliances and their functions WC, Urinal, Bidet, various showers, wash hand basin sink, tap and valves.</p> <p>4.2 Sketch the fittings in 4.1</p> <p>4.3 State the construction requirements for installing the sanitary appliances.</p>	<ul style="list-style-type: none"> ▪ Explain the following sanitary appliances W.C Urinal, Bidet various showers, wash hand basin, sinks, taps and valves. ▪ Discuss the construction requirements for the installation of sanitary appliances. 	
General Objective: 5.0 Know the various types of drainage systems used in buildings.			
5	<p>Drainage Systems</p> <p>5.1 Identify the materials and fittings used in drainage work.</p> <p>5.2 Outline the combined and separate systems of drainage.</p> <p>5.3 Produce simple diagram of the system in 5.2.</p> <p>5.4 State the merits and demerits of the separate and combined drainage system.</p>	<ul style="list-style-type: none"> ▪ Explain to students the features drainage system. ▪ Sketch a drainage system. 	

General Objectives: 6.0 Know the methods of providing lighting in buildings.			
6	Lighting 6.1 State artificial and natural lighting methods. 6.2 Describe how to provide artificial lighting in houses. 6.3 Explain how to provide natural lighting in a house. 6.4 Describe how to integrate natural and artificial lighting in a house.	<ul style="list-style-type: none"> ▪ Introduce students to daylight6 factor. ▪ Differentiate between natural and artificial lighting. 	Provide 'Daylight' factor chart.
General Objective: 7.0 Know the electrical fittings and controls in a house.			
7	Electrical Installations 7.1 State the common standard cables used for different fittings. 7.2 List the electrical fittings and controls and their uses. 7.3 Describe the construction provisions made for electrical fittings. 7.4 Describe simple electric circuit system used in residential houses. 7.5 Install simple electric wiring in low rise building.	<ul style="list-style-type: none"> ▪ Introduce students to I.E.E. and NEPA Regulations. ▪ Show student by illustration the various cables and fitting appropriate to low rise buildings. 	I.E.E. and NEPA Regulation.

ASSESSMENT: Course Works: 20%, Course Test: 20%, Practical: 10%, Examination: 60%

COMPETENCY: The students should understand the various services to building and how to maintain building Components.

REFERENCES:

1. Hall, F. "Plumbing: Cold Water Supplies, Drainage".
2. Hall, F. "Plumbing: Hot Water supply and easting Systems"
3. Lee R. Building Maintenance Management.

NATIONAL BOARD FOR TECHNICAL EDUCATION, KADUNA

PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: Maintenance Technology		Course Code: EST 226	Contact Hours: 2-0-0
THEORETICAL CONTENT			
WEEK	General Objective: 1.0 Understand the meaning of the terms used in maintenance and repairs and related facilities.		
	Specific Learning Outcomes	Teacher Activities	Resources
1	1.1 Define the terms used in the practice of repairs and maintenance of building and related facilities. 1.2 Explain the terms used in building of maintenance and related facilities.	<ul style="list-style-type: none"> ▪ Explain the meaning of maintenance generally narrow this to building maintenance. ▪ Give the various terms used in building maintenance. 	Chalkboard, chalk , duster.
General Objective: 2.0 Understand the ground geological fault and their effect on building.			
2	2.1 Explain the geological faults which cause defect in the foundation of building. 2.2 Explain the effect of foundation failures on the walls of buildings. 2.3 Illustrate the ground faults and the remedies to foundations. 9.4 Describe the remedies to various foundation failures.	<ul style="list-style-type: none"> ▪ Explain faults generally. ▪ Explain the meaning of geological faults. ▪ Show how such faults cause defects in foundation of building. ▪ Show the effect of foundation failures on the walls of building. ▪ Explain how theses faults can be remedied. 	Chalkboard, chalk, duster, various sketches.
General Objective: 3.0 Understand the types of defects which affect brick, block works and masonry and remedies for them.			
3 - 4	3.1 State the types of defects in brick, sandcrate wall, block wall, sand masonry walls and timber. 3.2 Explain the causes of decay in block-wall and sandcrate wall and masonry wall and timber. 3.3 Explain the remedies for the above defects in 3.1.	<ul style="list-style-type: none"> ▪ Explain the various defects walls. ▪ Give examples of such defects questions/answers of decay in wall and timber. ▪ Question/ answer on causes of decay in walls and timber. ▪ Explain remedies for decay in walls and timber. 	Chalkboard, chalk, duster.

General Objective: 4.0 Understand the causes of defect and their remedies in low-rise buildings.			
6 – 7	<p>4.1 State the types of defects in roofs.</p> <p>4.2 Explain the causes of defects in roofs</p> <p>4.3 Propose simple methods of prevention and remedies for 4.1 above.</p> <p>4.4 Propose simple methods of remedying the defects in low-rise building.</p> <p>4.5 Explain the case and effects of rising damp and penetrating damp on structure and fabric e.g. walls, floors, roofs etc.</p> <p>4.6 State the effect of technology on maintenance.</p>	<ul style="list-style-type: none"> ▪ Explain using questions and answers. ▪ Give examples and show practical cases. 	Chalkboard, chalk, duster.

NATIONAL BOARD FOR TECHNICAL EDUCATION, KADUNA

PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: Introduction to computer		Course Code: EST 227	Contact Hours:1-0-2
THEORETICAL CONTENT			
WEEK	General Objective: 1.0 Know the organization of an E.D.P. Environment.		
1 – 3	Specific Learning Outcomes	Teacher Activities	Resources
	1.1 Identify the requirements of the information system. 1.2 Describe the selection and implementation of computer system. 1.3 Describe the activities in the information system division.	<ul style="list-style-type: none"> ▪ Trace the historical development of computers. ▪ Introduce different parts of computer and their function. 	Computers with relevant software packages, U.P.S etc.
General Objective: 2.0 Understand the user Staff Issue.			
4 – 6	2.1 Describe the selection of staff. 2.2 Explain when and how user staff should be trained. 2.3 Describe the likely health problems to be encountered by the users of the computers such as Eye, Muscle, Fatigue, Hand and Wrist, Electromagnetic Radiation etc.	<ul style="list-style-type: none"> ▪ Give example of the caliber of staff required in computer outfit. ▪ Hands-on-operation on the computer. ▪ Use of relevant computer softwares. 	Printers and printing papers, ink cartridge.
General Objective: 3.0 Know the Procedures of Computer Operation.			
7 – 10	3.1 Interfacing with the operating system. 3.2 Types of operating systems.	<ul style="list-style-type: none"> ▪ Explain types of operating systems. 	Computers with relevant software packages.
General Objective: 4.0 Know Computer Control and Security.			
11 – 12	4.1 Describe the various aspects of security in computer installation. 4.2 Identify the characteristics of computer frauds. 4.3 Explain the computer viruses and how to prevent them.	<ul style="list-style-type: none"> ▪ Installation process and maintenance. 	Computer with relevant software packages.

	General Objective: 5.0 Know Computer Communications.		
13 – 14	5.1 Describe the Local Area Network (LAN). 5.2 Identify other Networks. 5.3 Introduce the Internet. 5.4 Introduce the use of a Real Estate Software.	<ul style="list-style-type: none"> ▪ Link computers to other uses. 	Computers with relevant software packages.

NATIONAL BOARD FOR TECHNICAL EDUCATION, KADUNA

PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: Final Project		Course Code: EST 228	Contact Hours: 2-0-0
THEORETICAL CONTENT			
WEEK	General Objective: 1.0 Understand the Content of Technical Report.		
	Specific Learning Outcomes	Teacher Activities	Resources
1 – 4	Content of Technical Report 1.1 Discuss the nature of various report. 1.2 Explain the meaning of technical report. 1.3 Define the readership of technical reports. 1.4 Explain the types of technical reports. 1.5 Determine the essential feature of a good report.	<ul style="list-style-type: none"> ▪ Explain the processes of writing projects and features of a good report. 	Visit library to collect relevant textbooks, periodicals etc in the areas of interest. Books on how to write projects.
General Objective: 2.0 Understand The Need For Valuation Report.			
5 – 6	Standard Methods in writing Technical Report 2.1 State why it is important to use standard method in writing technical report. 2.2 Outline the procedure in writing report. 2.3 State how it should be made simple correct and follow a convention.	<ul style="list-style-type: none"> ▪ Discuss the use of standard methods of writing a report. 	Reports, relevant materials.
General Objective: 3.0 Understand the information required in a report.			
7 – 8	3.1 Explain their preference in report. 3.2 Explain the difference between facts and opinion. 3.3 State how this can be extracted from reports.	<ul style="list-style-type: none"> ▪ Explain the important of reference in report. ▪ Distinguish between facts and opinions. 	Reports, relevant books and materials.

	General Objective: 4.0 Understand how to prepare a good Project.		
9 – 10	Preparation of a good Project 5.1 Outline the procedure in producing a good project: a) Clarity of aims and objectives of the Project. b) Achievement of the objectives. c) Competence in the objectives. d) Suitability of methodology. e) Focusing practical utility of the project for the enhancement and contribution to the profession.	<ul style="list-style-type: none"> ▪ Give with example the procedure in producing a good projects using all the methodologies required. ▪ Give students a graded assignment on the procedures. 	Reports, relevant books and materials.
	General Objective: 5.0 Understand how to write project on selected topics.		
11 – 14	Selection of topic in writing Projects 5.1 Arrange an individual or group project. 5.2 Select some topics for them. 5.3 Discuss the selected topics. 5.4 Select group topics and guide the students in any of the following course areas:- i) Estate Management ii) Valuation iii) Land Use iv) Centre and Local Government v) Building Construction vi) Property Rating and Taxation vii) Property Development and Management viii) Town Planning 5.5 Write the project to an acceptable standard. 5.6 Bind the project. 5.7 Make presentation to their advisors.	<ul style="list-style-type: none"> ▪ Discuss the processes of selecting project topics. ▪ Students should select their own topics in the approved areas. ▪ Students should write basic outline on how to proceed writing a projects. ▪ Students projects should be written in an accepted manner with the final package. ▪ Projects should be graded with an approved marking grade. 	Project reports and relevant books. Conference papers.

NATIONAL BOARD FOR TECHNICAL EDUCATION, KADUNA

PROGRAMME: NATIONAL DIPLOMA ESTATE MANAGEMENT			
COURSE: SIWES		Course Code: EST 200	Contact Hours: 0-0-4
THEORETICAL CONTENT			
WEEK	General Objective: 1.0 Know the sources, quality and classification of water.		
1 – 4	Specific Learning Outcomes	Teacher Activities	Resources
	<p>Organizational Structure</p> <p>1.1 Explain the nature and structure of the organization.</p> <p>1.2 Discuss the functional interaction and administrative hierarchy on 1.1 above.</p> <p>1.3 Explain the channels of communication within the organization.</p> <p>1.4 Outline the following office practice procedure:</p> <p>a) Opening and closing files.</p> <p>b) Filing document</p> <p>c) File movement</p> <p>d) Extraction of relevant information from file.</p> <p>1.5 Handle and maintain the following tools and equipment in the Estate Management profession:</p> <p>a) Measuring</p> <p>b) Maps</p> <p>c) Ranging Poles</p> <p>d) Calculators</p>	<ul style="list-style-type: none"> ▪ Students should be taking round the office and be given overview of office set-up. ▪ Students should be given assignments to identify the various facilities in the office. ▪ Students should demonstrate how measuring tapes, calculators, ranging price are being maintained. 	<p>Calculators</p> <p>Tapes</p> <p>Ranging Poles</p> <p>Basic Estate Management Books</p> <p>Maps etc.</p>

	General Objective: 2.0 Know applications of basic tools in valuation processes.		
5 – 8	<p>Valuation</p> <p>2.1 Identify properties with the help of maps and of property addresses.</p> <p>2.2 Carryout the following tasks:-</p> <ol style="list-style-type: none"> Inspection of land/or building. Sketching of buildings. Writing a report on (A and B) above. Calculation of areas from sketches. Collection and simple analysis of rental and sales data. Collection and simple analysis of information based on market survey. Crop and property enumeration. 	<ul style="list-style-type: none"> ▪ Students should be guided on how to read properties through mapsound drawings. ▪ Students should be introduced to basic techniques in properties valuation. ▪ Students should be given graded assignments. 	<p>Mapsound drawing, sketches, rental and sales data.</p> <p>Valuation Tables/Books.</p>
	General Objective: 3.0 Understand Land Administration, Development, Management and Agency.		
9 - 13	<p>Land Administration</p> <p>3.1 Undertake the following tasks:</p> <ol style="list-style-type: none"> Land acquisition (compulsory and private treaty). Calculations of costs attendant to property. Receiving and processing applications for plot allocation and certificate of occupancy, consent to assign and mortgage. Calculation and rental and development charges. Receive and process application for registration for instruments in land. Chart documents. Conduct searches. 	<ul style="list-style-type: none"> ▪ Students should be introduced to the processes involved in land administration, land development and property management/ agency. ▪ Give students assignments. 	<p>Relevant textbooks and materials.</p>

	<p>Development</p> <p>3.2 Interpret land use development regulations.</p> <p>3.3 read and interpret simple building drawings.</p> <p>3.4 Collect data relating to real property development.</p> <p>Property Management/Agency</p> <p>3.5 Carryout the following functions:</p> <ol style="list-style-type: none"> a) Inspection of properties with prospective client. b) Selection of tenants. c) Rent assessment and collection. d) Liaise with solicitors for preparation and leases and tenancies. e) Inspection of properties for preventive and curative maintenance. f) Prepare schedules of dilapidation. g) Negotiate and enforce lease terms. h) Keep estate records. i) Canvass for clients. 		<p>Building Regulations.</p> <p>Building Construction Books.</p>
	<p>General Objective: 4.0 Understand appraisal and management of projects.</p>		
14 – 16	<p>Development Appraisal/Project Management</p> <p>4.1 Carryout the following functions:</p> <ol style="list-style-type: none"> a) Collect data relevant to development appraisal. b) Liaise with other professional and institutions. c) Monitor projects on site. d) Prepare and write-up based on findings in (a – c) above. 	<ul style="list-style-type: none"> ▪ Students should visit project sites for monitoring and liaising with other professional and collating relevant data. ▪ Briefed on the principles of report writing. ▪ Give students assignments. 	<p>Data relevant to development appraisal project sites.</p>