

# Building Technology - Higher National Diploma (HND)

## Geo-Informatic and Quantity Surveying Courses

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# Engineering Surveying I

<b>PROGRAMME: HND BUILDING</b>			
<b>Course: Engineering Surveying I</b>		<b>Course Code:</b> SUG 208	<b>Contact Hours:</b> 1 - 0 - 3
<b>Course Specification: Theoretical Content</b>			
<b>General Objective 1.0: Understand the basic principles and scope of engineering surveying.</b>			
<b>WEEK</b>	<b>Specific Learning Objective:</b>	<b>Teachers Activities</b>	<b>Resources</b>
1	1.1 List the types and scales of plans required for constructions. 1.2 Describe the general procedure of setting out engineering works. 1.3 Describe the general procedure of "as built" surveys. 1.4 List the methods of surveying for construction. 1.5 State examples of engineering surveys where photogrammetry may be used. 1.6 Apply the uses of modern computational methods in engineering surveys. 1.7 Apply the uses of modern survey instruments in engineering surveys.	<ul style="list-style-type: none"> <li>• Lecture</li> </ul>	<ul style="list-style-type: none"> <li>• Chalkboard</li> <li>• OHP</li> <li>• Charts</li> <li>• Picture</li> <li>• Video</li> <li>• Maps</li> </ul>
<b>General Objective 2.0: Understand the basic principles of geometric design of routes.</b>			
<b>WEEK</b>	<b>Specific Learning Objective:</b>	<b>Teachers Activities</b>	<b>Resources</b>
2	2.1 List the types and scales of plans required for route design. 2.2 Identify the geometrical elements of routes especially roads. 2.3 Distinguish between geometric design requirements of roads, railways, pipelines, electric power lines, etc.	Ditto	<ul style="list-style-type: none"> <li>• Maps</li> <li>• Drawings</li> <li>• Pictures</li> </ul>
<b>General Objective 3.0: Know how to set out routes consisting of straight and circular curves</b>			
<b>WEEK</b>	<b>Specific Learning Objective:</b>	<b>Teachers Activities</b>	<b>Resources</b>
3	3.1 Describe the process of setting out long straight lines. 3.2 Derive mathematical relationships between circular curve elements. 3.3 Solve the problem of setting out the circular curve if there are obstructions to sighting the deflection angles. 3.4 Run through the chainage in a route comprising straight and circular curves.	<ul style="list-style-type: none"> <li>• Lecture</li> </ul>	<ul style="list-style-type: none"> <li>• Total Station</li> <li>• Theodolite</li> </ul>

<b>PROGRAMME: HND BUILDING</b>			
<b>Course: Engineering Surveying I</b>		<b>Course Code:</b> SUG 208	<b>Contact Hours:</b> 1 - 0 - 3
<b>Course Specification: Theoretical Content</b>			
4	3.5 Derive necessary formulae to set out circular curves by deflection angles.	• Lecture	- Ditto -
5	3.6 Describe other methods of setting out circular curves. 3.7 Utilise the tabulated deflection angles when occupying successive instrument stations along circular curves. 3.8 Set out a long circular curve by deflection angles using successive instrument stations.	- Ditto -	- Ditto -
<b>General Objective 4.0: Understand the methods of running, calculating plotting and drawing longitudinal sections and cross sections.</b>			
<b>WEEK</b>	<b>Specific Learning Objective:</b>	<b>Teachers Activities</b>	<b>Resources</b>
6	4.1 Describe the basic principles of sectioning. 4.2 Distinguish between longitudinal sections and cross sections. 4.3 Range and set out cross sections. 4.4 Describe the methods of leveling the longitudinal section. 4.5 Illustrate methods of booking sectional observation. 4.6 Reduce the levels of all points and plot longitudinal section and cross sections. 4.7 Explain the essential difference between the plot of longitudinal section and cross section. 4.8 Explain why in practice cross sections are usually taken at intervals.	- Ditto -	• Digital levels • Engineer's level
7	4.9 Carry out ranging, leveling, calculation, plotting and drawing of longitudinal section and cross sections at 30m intervals of a proposed road alignment.	• Lecture with examples.	- Ditto -
<b>General Objective 5.0: Understand methods of area computations</b>			
<b>WEEK</b>	<b>Specific Learning Objective:</b>	<b>Teachers Activities</b>	<b>Resources</b>
8	5.1 Distinguish between rectilinear and irregular areas. 5.2 Describe the methods of obtaining the area using formulae for geometric figures. 5.3 Use the planimeter.	• Lecture	• Planimeter
9	5.4 Calculate areas by the trapezoidal and by Simpson's rules. 5.5 Compare the methods of area calculations.	• Lecture with examples	- Ditto -

<b>PROGRAMME: HND BUILDING</b>			
<b>Course: Engineering Surveying I</b>		<b>Course Code:</b> SUG 208	<b>Contact Hours:</b> 1 - 0 - 3
<b>Course Specification: Theoretical Content</b>			
<b>General Objective 6.0: Understand methods of volumes computations.</b>			
<b>WEEK</b>	<b>Specific Learning Objective:</b>	<b>Teachers Activities</b>	<b>Resources</b>
10	6.1 Explain the need for calculation of volumes of earthworks. 6.2 Derive the trapezoidal and prismatic formulae.	• Lecture	- Ditto -
11	6.3 Calculate volumes from 6.2 above. 6.4 Calculate volumes from contour lines. 6.5 Calculate volumes from spot heights.	• Lecture, give examples.	- Ditto -
<b>General Objective 7.0: Understand the process of setting out structures.</b>			
<b>WEEK</b>	<b>Specific Learning Objective:</b>	<b>Teachers Activities</b>	<b>Resources</b>
12	7.1 Explain how setting out differs from ordinary surveying. 7.2 Describe the forms of horizontal and vertical controls needed by the setting out process. 7.3 Determine plans required for setting out. 7.4 Describe all the stages of setting out engineering structures. 7.5 Set out buildings.	Ditto	• Total Station • Digital theodolite
<b>General Objective 8.0: Understand the specialized aspects of "as built" surveys.</b>			
<b>WEEK</b>	<b>Specific Learning Objective:</b>	<b>Teachers Activities</b>	<b>Resources</b>
13	8.1 Explain the need for "as built" surveys. 8.2 Identify the requirements of as "built" surveys. 8.3 Carry out the methods of surveying for existing and new works as finally constructed.	Ditto	- Ditto -
<p><b>Revision</b>      Week 14 &amp; 15</p> <p><b>References</b>    Engineering Surveying (1993) Schotliell, Poulterwrith-Heimm.</p> <p><b>Assessment:</b> Coursework 20%, Course test 20%, Practical 20%, Examination 40%.</p> <p><b>Competency:</b> The student should be able to undertake minor engineering surveys and complete all necessary calculations.</p>			

# Measurement of Civil Engineering Works I

<b>PROGRAMME: HND BUILDING TECHNOLOGY</b>			
<b>Course: Measurement of Civil Engineering Works I</b>		<b>Course Code: QUS 316</b>	<b>Contact Hours: 1-0-3</b>
<b>Course Specification: Theoretical Content</b>			
<b>General Objective: 1.0 Understand the Principles and format of CESMM</b>			
<b>WEEK</b>	<b>Specific Learning Outcome</b>	<b>Teachers Activities</b>	<b>Resources</b>
1 - 5	1.1 Explain the arrangement and format of the CESMM 1.2 Analyse the section sin the CESMM i.e a. Definitions b. General principles c. Application of work classification d. Coding and numbering of items e. Preparation of the bill of quantities f. Completion and pricing of the bill of quantities g. Working classification	<ul style="list-style-type: none"> <li>• Explain the concept of CESMM</li> <li>• Give assignment on CESMM coding</li> </ul>	<ul style="list-style-type: none"> <li>• Chalk board, duster, CESMM</li> </ul>
6 - 7	1.3 Explain the method of coding in the CESMM 1.4 Use the coding of civil engineering works 1.5 Explain the method of deriving bill of quantities items, applying the horizontal and vertical divisions and notes applicable to each work class.	<ul style="list-style-type: none"> <li>• Lectures</li> <li>• Give assignments</li> </ul>	- do-
<b>General Objective: 2.0 Understand the concept of method related changes</b>			
<b>WEEK</b>	<b>Specific Learning Outcome</b>	<b>Teachers Activities</b>	<b>Resources</b>
8 - 9	2.1 Explain method related charges 2.2 Identify the reason for providing for method related charges	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Give assignment in the utilization of method related changes</li> </ul>	<ul style="list-style-type: none"> <li>• Chalk board, duster</li> </ul>
9-10	2.3 State the advantages and disadvantages of method related charges 2.4 Write method related changes for inclusion in bills of quantities.		

<b>PROGRAMME: HND BUILDING TECHNOLOGY</b>			
<b>Course: Measurement of Civil Engineering Works I</b>		<b>Course Code: QUS 316</b>	<b>Contact Hours: 1-0-3</b>
<b>Course Specification: Theoretical Content</b>			
<b>General Objective: 3.0 Understand the measurement code and measure works and some selected areas</b>			
<b>WEEK</b>	<b>Specific Learning Outcome</b>	<b>Teachers Activities</b>	<b>Resources</b>
11-13	3.1 Measure work under general items 3.2 Measure works under site investigation 3.3 Measure works under geotechnical and other specialist processes 3.4 Measure works under demolition and site clearance	<ul style="list-style-type: none"> <li>• Give working examples</li> <li>• Give assignment</li> <li>• Visit new site</li> </ul>	<ul style="list-style-type: none"> <li>• -ditto-</li> <li>• Drawings, CESMM</li> </ul>
<p><b>Assessment:</b> Coursework: 20% Course test: 20% Practical: 20% Examination: 40%</p> <p><b>Competency:</b> The students should be able to measure special civil engineering works, and understand preparation of method related changes in civil engineering, bills of quantities.</p> <p><b>Reference:</b> Ivor, H. Sceley, Civil Engineering Quantities 5th Edition.</p>			

<b>Course: Measurement of Civil Engineering Works I</b>		<b>Course Code: QUS 316</b>	<b>Contact Hours: 1-0-3</b>
<b>Course Specification: Practical Content</b>			
<b>General Objective 1.0: Understand the principles and format of CESMM in some selected items</b>			
<b>WEEK</b>	<b>Specific Learning Outcome</b>	<b>Teachers Activities</b>	<b>Resources</b>
1 - 7	1.1 Apply the sections and coding in the CESMM in the measurement of the following <ul style="list-style-type: none"> <li>a) General items</li> <li>b) Demolition and site clearance</li> </ul>	<ul style="list-style-type: none"> <li>• Give assignment</li> </ul>	Chalk, chalk board, duster during CSMM
<b>General Objective 2.0: Understand the concept of method related changes</b>			
<b>WEEK</b>	<b>Specific Learning Outcome</b>	<b>Teachers Activities</b>	<b>Resources</b>
8 - 13	2.1 Write method related changes for inclusion in bills of quantities	- do -	- do -

# Advanced Measurement of Construction Works I

<b>PROGRAMME: HIGHER NATIONAL DIPLOMA BUILDING TECHNOLOGY</b>			
<b>Course: Advanced Measurement of Construction Work I</b>		<b>Course Code:</b> BLD 307	<b>Contact Hours: 2-0-</b> 2
<b>Course Specification: Theoretical Content</b>			
<b>General Objective: Know how to measure from drawings and by reference to specifications of more complex building construction</b>			
<b>WEEK</b>	<b>Special Learning Objective:</b>	<b>Teachers Activities</b>	<b>Resources</b>
1 - 4	- Measure substructure work for complex and special foundations. 1.2 Measure floor-solid, suspended, ground floor slab and associated reinforcement and form work 1.3 Measure walls of brickwork, blockwork of solid cavity and hollow nature, together with associated features.	• Lecture • Give assignment • Ditto	• Typical drawings of details for building.
8	1.4 Measure doors, windows and associated frames and iron mongery including adjustment for openings 1.5 Measure roof construction and roof covering-reinforced concrete roofs, steel trusses tiles, felt asbestos, corrugated sheet, ead, zinc, copper and aluminum.	Ditto	- do -
15	1.6 Measure staircase timber, reinforced concrete including finishing. 1.7 Measure fittings and fixture-cupboards, shelving, skirting, architrave's picture rails, pelmets, dadoes etc. 1.8 Measure frames-structural steel, reinforced concrete beams.	Ditto	- do -
<p><b>Assessment:</b> Course work 20% Course Test 20% Practical - 20% Examination - 40%.</p> <p><b>Competency:</b> The student should be able to prepare measurements from drawings in a standard form.</p> <p><b>Reference:</b> Emmanuel C. Oborch, Agele Olufolai "Advance measurement of Building works"</p>			

<b>PROGRAMME: HND BUILDING TECHNOLOGY</b>			
<b>Course: Advanced Measurement of Construction Works I</b>		<b>Course Code: BLD 307</b>	<b>Contact Hours: 2-0-2</b>
<b>Course Specification: Practical Content</b>			
<b>General Objective. Know how to Read from building drawings and preparing specifications and schedules of more complex building construction.</b>			
<b>WEEK</b>	<b>Specific Learning Outcomes:</b>	<b>Teachers Activities</b>	<b>Resources</b>
1 - 6	1 Know how to read drawings for substructure work for complex and specification of more complex building construction of traditional class and simple industrial buildings of two stories.	• Give practical examples and supervise assignment	Drawings, chalkboard and related items
7 - 13	2 Provide and read drawing substructure for complex and special foundations. 3 Prepare specification and schedules of suspended, ground floor slab of building drawings. 4 Prepare doors, and windows schedules for a complex building.	• Give practical examples and supervise assignment.	

## Advanced Measurement of Construction Works II

<b>PROGRAMME: HND BUILDING TECHNOLOGY</b>			
<b>Course: Advanced Measurement of Construction Works II</b>		<b>Course Code:</b> BLD 308	<b>Contact Hours: 2-1-0</b>
<b>Course Specification: Theoretical Content</b>			
<b>General Objective 1.0: To prove student with an Advanced knowledge of the Measurement of Construction works</b>			
<b>WEEK</b>	<b>Special Learning Objective:</b>	<b>Teachers Activities</b>	<b>Resources</b>
1-8	1.1 Measure drainage - explanation pipework, manholes, inspection chambers, soak away pits, septic tanks. 1.2 Measure water supply and sanitary appliances 1.3 Measure external works paths roads, flower and tree planting, turfins, fencing and gates.	<ul style="list-style-type: none"> <li>• Use illustrative diagrams to explain</li> <li>• Provide more practical exposure.</li> <li>• Create site visit</li> </ul>	<ul style="list-style-type: none"> <li>• Calculator, chalkboard, Duster, chalk</li> </ul>
<b>General Objective 2.0: Know how to prepare examples of different methods of the processing dimensions billing and preparing schedules</b>			
<b>WEEK</b>	<b>Special Learning Objective:</b>	<b>Teachers Activities</b>	<b>Resources</b>
9-15	2.1 Process dimension - abstracting art and shuffle, billing direct. 2.2 Prepare different bill formats explaining their uses:- a. Work section bill b. Elemental bill c. Sectionalized Trade bill d. Operational bill e. Activity bill 2.3 Prepare schedules for finishing, reinforcement, openings (doors and windows), iron mongery, sanitary appliances and drainage	<ul style="list-style-type: none"> <li>• Ditto</li> <li>• Give a practical project.</li> </ul>	<ul style="list-style-type: none"> <li>• Ditto</li> <li>• Drawing of building and civil engineering works</li> </ul>
<p><b>Assessment:</b> Coursework 20% Course test 20% Practical 20% Examination 40%</p> <p><b>Competency:</b> The students would be able to compare accurate talk from drawing and to arrange detailed schedules</p> <p><b>References:</b> 1. I. H. Seeley, "Advanced Building Measurements". 3<sup>rd</sup> Ed. 2. 1. H. Seeley", Quantity Surveying Practice" 2<sup>nd</sup> Ed.</p>			

# Contract Laws and Arbitration

<b>PROGRAMME: HND BUILDING TECHNOLOGY</b>			
<b>Course: Contract Law and Arbitration</b>		<b>Course Code: QUS 313</b>	<b>Contact Hours: 2-0-0</b>
<b>Course Specification: Theoretical Content</b>			
<b>General Objective 1.0: Understand the Law of contract of employment</b>			
<b>Week</b>	<b>Specific Learning Outcomes:</b>	<b>Teachers Activities</b>	<b>Resources</b>
1-3	1.1 Define (a) employee (b) employer and distinguish between the two 1.2 Explain: a. express terms of employment contract b. implied terms of employment contract 1.3 Cite example statutes which have effect on labour Decree 1970 1.1 State the duties of the employer/employee 1.2 Explain the termination of employment contract 1.3 Explain redundancy	<ul style="list-style-type: none"> <li>• Use practical examples to elaborate on terms</li> <li>• Cite relevant and practical examples</li> <li>• Cite practical examples</li> </ul>	<ul style="list-style-type: none"> <li>• Chalkboard, chalk, duster</li> </ul>
<b>General Objective 2.0: Understand the law governing labour or trade unions</b>			
<b>WEEK</b>	<b>Specific Learning Outcomes:</b>	<b>Teachers Activities</b>	<b>Resources</b>
4-5	2.1 Write about the origin and development of trade unions and the right of works to participate in trade unionsm 2.2 Define trade dispute 2.2 Describe the settlement of trade dispute as given in the trade dispute Act 1976 and later amended in 1977 2.3 Cite relevant cases in (1) above	<ul style="list-style-type: none"> <li>• Explain the significance of trade unions to: an individual nation building</li> <li>• Define dispute</li> <li>• Highlight on the trade dispute concept</li> <li>• Explain principles of the trade dispute Acts.</li> <li>• Give extensive practical examples</li> </ul>	<ul style="list-style-type: none"> <li>• Chalkboard, chalk, duster</li> </ul>

<b>PROGRAMME: HND BUILDING TECHNOLOGY</b>			
<b>Course: Contract Law and Arbitration</b>		<b>Course Code: QUS 313</b>	<b>Contact Hours: 2-0-0</b>
<b>Course Specification: Theoretical Content</b>			
<b>General Objective 3.0: Understand voluntary and compulsory liquidation</b>			
<b>WEEK</b>	<b>Specific Learning Outcomes:</b>	<b>Teachers Activities</b>	<b>Resources</b>
6-8	3.1 Define liquidation, bankruptcy in-solvency and winding-up 3.2 Explain voluntary liquidation 3.3 Explain compulsory liquidation 3.4 Give example of control bankruptcy and distribution of assets to creditors e.g bankruptcy Act 1914, Bankruptcy Act/Amendment 1926, companies Act 1968 etc	<ul style="list-style-type: none"> <li>• Cite relevant practical examples</li> <li>• Treat and discuss each concept and Acts, citing relevant practical applications</li> </ul>	<ul style="list-style-type: none"> <li>• Chalkboard, chalk, duster</li> </ul>
<b>General Objective 4.0: Understand the responsibilities and obligations of all the parties to a contract</b>			
<b>WEEK</b>	<b>Specific Learning Outcomes:</b>	<b>Teachers Activities</b>	<b>Resources</b>
9-10	4.1 Explain the relationship between the client and nominal sub-contractor and suppliers 4.2 Differentiate between the contractor and sub-contractors and nominated sub-contractor 4.3 Interpret the indemnity classes as they affect the clients, main contractors and nominated subcontractors and suppliers 4.4 State the role of client agents	<ul style="list-style-type: none"> <li>• Identify the role of each on contractual relationship</li> <li>• Cite relevant examples</li> <li>• Use the relevant JCT to explain the practical interrelationship between the parties</li> </ul>	Ditto
<b>General Objective 5.0: Understand the liabilities of the professionals in the construction industry</b>			
<b>WEEK</b>	<b>Specific Learning Outcomes:</b>	<b>Teachers Activities</b>	<b>Resources</b>
11	2.1 Explain the liabilities of professionals in construction in industry 2.2 Determine their respective roles	<ul style="list-style-type: none"> <li>• Define:</li> <li>• responsibility</li> <li>• liabilities and</li> <li>• Discuss each as applied in the JCT</li> </ul>	Ditto

<b>PROGRAMME: HND BUILDING TECHNOLOGY</b>			
<b>Course: Contract Law and Arbitration</b>		<b>Course Code: QUS 313</b>	<b>Contact Hours: 2-0-0</b>
<b>Course Specification: Theoretical Content</b>			
<b>General Objective 6.0: Understand how contract can be discharged and remedied</b>			
<b>WEEK</b>	<b>Specific Learning Outcomes:</b>	<b>Teachers Activities</b>	<b>Resources</b>
12-13	6.1 Explain the following method of discharge by performance <ul style="list-style-type: none"> <li>a. discharge by performance</li> <li>b. discharge under conditions</li> <li>c. discharge by renunciation</li> <li>d. discharge by fresh agreement</li> <li>e. discharge by frustration</li> <li>f. discharge by determination</li> </ul> 6.2 Propose appropriate remedies for breach of contract including their classifications 6.3 Cite relevant case	<ul style="list-style-type: none"> <li>• Cite relevant and practical examples</li> </ul>	Ditto
<b>General Objective 7.0: Know the meaning application and procedures of arbitration in the building industry</b>			
<b>WEEK</b>	<b>Specific Learning Outcomes:</b>	<b>Teachers Activities</b>	<b>Resources</b>
14-15	7.1 Define arbitration and arbitration agreement 7.2 State the merits and demerits of arbitration 7.3 Describe how arbitrators and appointed 7.4 State the duties of arbitrators	<ul style="list-style-type: none"> <li>• Give relevant examples</li> <li>• Expose the students to various arbitration cases</li> </ul>	
<p><b>Assessment:</b> Coursework 20% Course test 20% Practical 0% Examination 60%</p> <p><b>Competency:</b> The students would be familiar with current laws governing employment, labour and the responsibility involved in contract laws.</p> <p><b>References:</b> Agua Gkroup, "Contract administration for architects and quantity Surveyors; Glough, R. H., "Construction Contracting".</p>			

## Conditions of Contract

<b>PROGRAMME: HND BUILDING TECHNOLOGY</b>			
<b>Course: Conditions of Contract</b>		<b>Course Code: QUS 314</b>	<b>Contact Hours: 2-0-0</b>
<b>Course Specification: Theoretical Content</b>			
<b>General Objective 1.0: Provide the students with advanced knowledge of the application of JCT classes in project execution.</b>			
<b>Weeks</b>	<b>Specific Learning Outcome:</b>	<b>Teachers Activities</b>	<b>Resources</b>
1 - 9	1.10 Analyse clause by clause, the JCT 1963/1977, or the JCT 1980 (both private and with quantities) 1.11 Identify the differences between the condition studied above and the following standard forms a. The Federal Ministry of Work (FMW) standard form b. The JCT 1963/1977 or JCT 1980 (private without quantities) c. State government d. The I.C.E conditions of agreement and bond e. Form GC/Works/1 1.12 Detect flaws in standard contract clauses 1.13 Suggest modifications to standard contract forms to suit unusual condition or situations 1.14 Appraise practical problems and legal technicalities in construction contract.	<ul style="list-style-type: none"> <li>• Provide all copies of the JCT</li> <li>• Use question and answer techniques.</li> <li>• Give more assignment</li> </ul>	<ul style="list-style-type: none"> <li>• Copies of all the JCT, chalk, duster, chalkboard.</li> </ul>

<b>PROGRAMME: HND BUILDING TECHNOLOGY</b>			
<b>Course: Conditions of Contract</b>		<b>Course Code: QUS 314</b>	<b>Contact Hours: 2-0-0</b>
<b>Course Specification: Theoretical Content</b>			
<b>General Objective 2.0: Understand in details the various standard forms for subcontract works and relate them to the main contract forms.</b>			
<b>Weeks</b>	<b>Specific Learning Outcome:</b>	<b>Teachers Activities</b>	<b>Resources</b>
10-13	2.1 Analyse the clause by clause the JCT 1963/1977 or JCT 1980 standard subcontract form 2.2 Identify the relationship of the subcontract clause to those in the main contract 2.3 Interpret these clauses to those in the main contract 2.4 Apply them to construction work	- ditto -	- Ditto -
<p><b>Assessment:</b> Coursework 20% Course test 20% Practical 0% Examination 60%</p> <p><b>Competency:</b> Student would be familiar with and understand the JCT form of contract and be able to interpret the course.</p> <p><b>References:</b> 1. Glugh R. H., "Construction Contracting".            2. Entwisle, "F. D., "Building regulation practice and procedure.</p>			

# Estimating and Price Analysis I

<b>PROGRAMME: Higher National Diploma in Building Technology</b>			
<b>Course: Estimating and Price Analysis I</b>		<b>Course Code: BLD 407</b>	<b>Contact Hours: 1-1-0</b>
<b>Course Specification: Theoretical Content</b>			
<b>General Objective 1.0: Know how to build-up unit Rates for complex building works and civil engineering works including preliminary items.</b>			
<b>WEEK</b>	<b>Specific Learning Outcome:</b>	<b>Teachers Activities</b>	<b>Resources</b>
1 - 8	1.1 Carry-out build-up unit prices of a given complex building and civil engineering works 1.2 Appreciate the use of Data files for materials labour and plant. 1.15 Know how to make an approximate estimate by various Unit, cube superficial or floor Area, Storey enclosure and Approximate quantities.	<ul style="list-style-type: none"> <li>• Build-up unit prices and analyse rate for all materials require for complex building and Civil Engineering Works.</li> <li>• Price preliminary items for building and civil engineering works.</li> <li>• Price temporary works and services for civil engineering works</li> <li>• Prepare and discuss cost Data Bank.</li> <li>• Explain when it is beneficial or advantageous to either hire or buy a plant.</li> </ul>	<ul style="list-style-type: none"> <li>• FMW&amp;H Form of contract</li> <li>• S.M.M &amp; S</li> <li>• Three Colum Cash booksheets</li> </ul>
<b>General Objective 2.0: Know how to make up approximate estimate by various unit, cube superficial or floor Area, Storey enclosure and approximate quantities.</b>			
<b>WEEK</b>	<b>Specific Learning Outcome:</b>	<b>Teachers Activities</b>	<b>Resources</b>
9 - 12	2.1 Define and discuss the following various methods <ul style="list-style-type: none"> <li>a. Unit</li> <li>b. Cube</li> <li>c. Superficial</li> <li>d. Storey enclosure</li> <li>e. Approximate quantities</li> </ul> 2.2 Illustrate and Demonstrate items 2.1 (I-v) above	<ul style="list-style-type: none"> <li>• Lectures</li> <li>• Guve practical examplesengineering works.</li> </ul> <p style="text-align: center;">- do -</p>	Drawings, Chalkboard and related items

<b>PROGRAMME: Higher National Diploma in Building Technology</b>			
<b>Course: Estimating and Price Analysis I</b>		<b>Course Code: BLD 407</b>	
		<b>Contact Hours: 1-1-0</b>	
<b>Course Specification: Theoretical Content</b>			
<b>General Objective 3.0: Know factors affecting cost or tenders.</b>			
<b>WEEK</b>	<b>Specific Learning Outcome:</b>	<b>Teachers Activities</b>	<b>Resources</b>
13 - 15	3.1 Show how the various factors on a given construction project affect the cost of tenders.	<ul style="list-style-type: none"> <li>• Explain and compute the contractual effects of the following materials, labour plant on-site cost, site location, profit Head office overheads, fluctuation clause, claims on tenders.</li> </ul>	
<p><b>Assessment:</b> Coursework: 20% Course test: 20% Practical 0% Examination 60%;</p> <p><b>Competency:</b> The student should know how to build up unit rates and make estimates for complex and civil engineering works.;</p> <p><b>Reference:</b> Ayeni J. O., " Principles of tendering and estimating".</p>			

## Estimating and Price Analysis II

<b>PROGRAMME:</b> Higher National Diploma in Building Technology			
<b>COURSE:</b> Estimating and Price Analysis II		<b>COURSE CODE:</b> BLD 408	<b>CONTACT HRS:</b> 1-1-0
<b>Course Specification: Theoretical Content</b>			
<b>General Objective:</b>			
<b>WEEK</b>	<b>Specific Learning Outcomes:</b>	<b>Teachers Activities</b>	<b>Resource</b>
1-15	<ol style="list-style-type: none"> <li>1. Appreciate the various types of above.</li> <li>2. Relate each type to a given project.</li> <li>3. Appreciate the interpretation of Drawings, Specifications and Bills of Quantities.</li> <li>4. Appreciate the Value and Necessity of Tender Documents.</li> </ol>	<ul style="list-style-type: none"> <li>• Describe the different tendering procedures:</li> <li>• Negotiation</li> <li>• Selective</li> <li>• Open</li> <li>• Explain the different types of building contracts:</li> <li>• Fixed price</li> <li>• Cost reimbursement</li> <li>• Target</li> <li>• Management</li> <li>• Turn key</li> <li>• Explain and Discuss the duties and responsibilities of Top Management.</li> <li>• Illustrate the determinates of Overheads and Profit Margin of a Construction Organization.</li> <li>• Describe Tender documents.</li> </ul>	<ul style="list-style-type: none"> <li>• Chalk board,</li> <li>• JCT/FMW&amp;H form</li> </ul> <p>SMM&amp;S 3-Column Cash Book</p>
<p><b>Assessment:</b> Coursework: 20% Course test: 20% Practical 0% Examination 60%</p> <p><b>Competency:</b> The students should be familiar with the different tendering methods and types of contract.</p> <p><b>Reference:</b> Roy, "Project Cost Control in Construction". Smith, R. C. "Estimating and tendering for building work".</p>			

# Technical Report Writing

<b>PROGRAMME: BUILDING TECHNOLOGY HND</b>			
<b>COURSE: TECHNICAL REPORT WRITING</b>		<b>COURSE CODE:</b> BLD 312	<b>CONTACT HRS:</b> 1-0-0
<b>Course Specification: Theoretical Content</b>			
<b>General Objective 1.0: Understanding the content of a technical report.</b>			
<b>WEEK</b>	<b>Special Learning Objective</b>	<b>Teachers Activities</b>	<b>Resource</b>
1	1.1 Explain the meaning of technical report 1.2 Identify the purpose of technical reports	Lecture and give examples	Chalkboard
2	1.3 Explain types and uses of technical reports		
<b>General Objective 2.0: Understanding the methodology and sequence of writing technical reports</b>			
<b>WEEK</b>	<b>Special Learning Objective</b>	<b>Teachers Activities</b>	<b>Resource</b>
3-6	2.1 Discuss the following in technical reports: a. determination of topic and title b. justification of title c. abstract or synopsis of the report d. aim and objectives of the report e. classification of data f. scope and limitation of project g. data analysis (graphical, tabular and descriptive methods) h. presentation of data (use of appendices).	- do -	- do -
7	2.2 Explain how technical reports should be made clear and correct.		
8	2.3 Understand the information that is required in technical report writing. 2.4 Information required in technical report writing. 2.5 Explain the various types of information that would be required in reports. 2.6 Determine the factors that influence solutions.	- do -	- do -
9	2.7 Advance building technology conclusion arising from factors 2.8 Select criteria required in case studies.		
10	2.9 Determine critical analysis of case studies 2.10 Produce summary		

<b>PROGRAMME: BUILDING TECHNOLOGY HND</b>			
<b>COURSE: TECHNICAL REPORT WRITING</b>		<b>COURSE CODE:</b> BLD 312	<b>CONTACT HRS:</b> 1-0-0
<b>Course Specification: Theoretical Content</b>			
11	2.11 Make propositions (Author's summary) 2.12 Develop conclusion to a technical report.		
12	2.13 write a bibliography in standard format 2.14 Explain terms of reference in report 2.15 Explain the difference between facts and opinions.	• Lecture • Conduct a site visit	
13	2.16 Explain how fact and opinions may be distinguished in writing reports		
14	2.17 Write reports on selected technical matters 2.18 Re-write the abstrat		
<p><b>Assessment:</b> Coursework: 20% Course test: 20% Practical: 0% Examination 60%</p> <p><b>Competency:</b> The student should be able to write a good technical report.</p>			

# Project

<b>PROGRAMME: BUILDING TECHNOLOGY HND</b>			
<b>COURSE: PROJECT</b>		<b>COURSE CODE:</b> BLD 402	<b>CONTACT</b> HRS: 0-1-6
<b>Course Specification: Theoretical Content</b>			
<b>General Objective 1.0: Understand the importance of Project to the Programme</b>			
<b>WEEK</b>	<b>Specific Learning Outcomes:</b>	<b>Teachers Activities</b>	<b>Resource</b>
1	1.1 Explain what is meant by project. 1.2 State the need for project in the HND Building Technology programme.	<ul style="list-style-type: none"> <li>• Guide the students</li> <li>• Use questions and answers techniques.</li> <li>• Show examples.</li> </ul>	• Chalkboard
<b>General Objective 2.0: Know How to Identify Problems in Practice Identification of Problems in Practice.</b>			
<b>WEEK</b>	<b>Specific Learning Outcomes:</b>	<b>Teachers Activities</b>	<b>Resource</b>
2 - 5	2.1 Identify the typical problems in Building Construction Practice. 2.2 State the causes of these problems. 2.3 Explain the need to find solutions to these problems. 2.4 Deduce solution to these problems.	-do-	-do-
<b>General Objective 3.0: Know How to Collect and Use Data for Analysis. Data Collection and Analysis</b>			
<b>WEEK</b>	<b>Specific Learning Outcomes:</b>	<b>Teachers Activities</b>	<b>Resource</b>
6 - 9	3.1 Enumerate the various methods of data collection for project works. 3.2 Explain the use of the collected data. 3.3 Describe the kind of analysis which such data can sustain. 3.3 Analyse the data collected. 3.4 Solve given Building Construction problems using the analysed data in 3.4 above. 3.5 Explain the basic for the choice of the alternative applied in 3.5.	-do-	-do-

<b>PROGRAMME: BUILDING TECHNOLOGY HND</b>			
<b>COURSE: PROJECT</b>		<b>COURSE CODE:</b> BLD 402	<b>CONTACT</b> HRS: 0-1-6
<b>Course Specification: Theoretical Content</b>			
<b>General Objective 4.0: Know How to Present Project</b>			
<b>WEEK</b>	<b>Specific Learning Outcomes:</b>	<b>Teachers Activities</b>	<b>Resource</b>
10	4.1 Prepare an abstract for the project dissertation.		
11 - 13	4.2 Write an outline of the dissertation. 4.3 Analyse the outline for consistency, unity, coherence and clarity. 4.4 Write in detail all the process undertaken in the course of the project work and the deductions made following the analysed outline. 4.5 Prepare footnotes. 4.6 List references/bibliography correctly stating a. Author's name b. Title of Book or journal c. Publishers d. Name; place and date published. 4.7 Revise the written project dissertation 4.8 Type the written project dissertation 4.9 Proof-read after typing 4.10 Produce the completed work neatly to the required number of copies (at least 3) 4.11 Bind the dissertation into book form (preferably A4 size) 4.12 Represent the project works with dissertation to designated assessors.	• Guide the students  -do-	-do-  -do-
<p><b>Assessment:</b> Coursework: 20%, Defense marks: 40%, Readers mark: 20% Final 20%.</p> <p><b>Competency:</b> The student should be able to use the knowledge and skills acquired in the various courses to present a project report.</p>			

## Guidelines for Assessment of Project Supervisor Assessment Part A

TITLE OF PROJECT	
NAME OF STUDENT	
REGISTRATION NUMBER	
COURSE	

### GENERAL ASSESSEMENT

			MAXIMUM SCORE	ACTUAL SCORE
1	Has the student understood the problem and pursued it?	(Fully) (Partly) (Not at all)	4	
2	To what extent has the student shown self reliance in determining the outcome of work?	(Greatly) (Slightly) (Not at all)	3	
3	What original work has the student contributed to the problem? e.g. experimental technique, mathematical derivation, an ingenious design.	(A considerable amount) (A little) (Nothing)	3	
4	Do you consider that the student has done more than just about or less than what are required by the objectives	(A reasonable) (Just amount of work) (Not much)	4	
5	Is the summary (a) concise	REPORT ASSESSMENT (Absolutely clear?) (Moderately clear?) (Not clear?)	3	
6	Is the summary (b) complete	(Adequately complete?) (Not complete?)	3	

			MAXIMUM SCORE	ACTUAL SCORE
7	Is the presentation of the report good and in conformity with the standard format in: building quality, typing quality, minimal errors and corrections, topics layout numbering system, acceptable number of words?		3	
8	Is the quality of English (sentence construction, grammar, spelling?) satisfactory		2	
9	How is the survey of literature. (Has relevant references being omitted? Is the appraisal critical enough?).		2	
10	Were results discussed? (in the case of literature survey, results may be replaced by contents of literature such as assumptions, leading statement, supporting experiments).		3	
11	How are diagrams presented and cross-referencing carried out? Are references made correctly?		3	
12	Does the report read as an integrated whole? (e.g details of work should be put in appendices, padding should be penalised).		2	
13	Has the problem been presented to the reader.		2	
14	How is the conclusion?		3	
TOTAL			40	

Brief Remarks: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Name of Supervisor: \_\_\_\_\_ Date: \_\_\_\_\_

## Panel Assessment (Oral Defence) Part B

TITLE OF PROJECT	
NAME OF STUDENT	
REGISTRATION NUMBER	
COURSE	

		MAXIMUM SCORE	ACTUAL SCORE
1	Abstract (summary)	2	
2	Clear Presentation of Problem	2	
3	Literature Survey (Adequacy of)	2	
4	Results Discussion (Through or Not)	2	
5	Diagrams, Referencing and Cross-Referencing)	2	
6	Overall flow and Cohenrency of the Report	2	
7	Conclusions	2	
8	Quality of English	2	
9	Overall Presentation and Quality of Report	2	
10	Amount of Work done by the Student	2	
11	Overall Presentation		
	a) Confidence in Presentation	4	
	b) Understand one of Subject Matter	4	
	c) Response to Technical Question	4	
	d) Command of English Language	4	
	e) Overall Performance	4	
	TOTAL	40	

Brief Remarks: \_\_\_\_\_

\_\_\_\_\_

**PANEL MEMBERS:**

S/N	NAME	SIGNATURE	DATE
1.			
2.			
3.			
4.			
5.			
6.			

## Reader Assessment Part C

TITLE OF PROJECT	
NAME OF STUDENT	
REGISTRATION NUMBER	
COURSE	
NAME OF SUPERVISOR	

			MAXIMUM SCORE	ACTUAL SCORE
1.	Abstract (summary)	(Absolutely clear?) (Moderately clear?) (Not clear)	1	
		(Adequate?) (Moderately?) (Comprehensive?) (Inadequate?)	1	
2.	Has the problem been presented.	(Clearly?)	2	
3.	Is the survey of Literature.	(Satisfactory?) (Moderately Good?) (Unsatisfactory?)	2	
4.	Were results discussed?	(Thoroughly) (A little?) (Not at all?)	2	
5.	How are diagrams presented and cross-referencing carried out? Are references made correctly?	(Well) (Moderately Well?) (Not at all?)	2	
6.	Does report read as an integrated whole?	(Yes) ((Party) (No)	2	
7.	Are conclusion in body of report	(Precise) (Moderately clear)	2	
8.	Is the quality of English (Sentence construction, grammar, spelling.	(Good) (Moderate) (Bad)	2	

			MAXIMUM SCORE	ACTUAL SCORE
9.	Is the presentation of the report good in conformity with the standard format in: binding quality, typing quality, errors and corrections, topic layout, numbering system etc.		2	
10.	Do you consider the student has done more than, just about or less than.	(A reasonable amount of work?	2	
TOTAL			40	

Brief Remarks: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Name of Reader: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_