

**CONTENT DEVELOPMENT
FOR BUILDING CONSTRUCTION**

| S/N | Content Areas | Sub-Areas/Topics | Expected number of Test Items |
|------------|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| 1 | Introduction to Building Construction | <ul style="list-style-type: none"> • Types of Buildings • Documents of Building Projects | 6 |
| 2 | Health and Safety in Construction | <ul style="list-style-type: none"> • Safety Precautions • Safe Practices • Basic First Aid Procedures | 8 |
| 3 | Preliminaries Site Operations | <ul style="list-style-type: none"> • Site Clearance and Leveling • Site layout and organization • Setting-out • Classification of Soil | 8 |
| 4 | Building and Construction Materials | <ul style="list-style-type: none"> • Building Materials • Damp Proof Materials • Local Materials | 8 |
| 5 | Construction Tools and Equipment | <ul style="list-style-type: none"> • Setting out and marking out tools and equipment • Measuring tools and equipment • Cuttings tools and equipment • Excavation tools and equipment • Construction Machines e.g. concrete mixers, excavators etc. | 10 |
| 6 | Substructure Construction | <ul style="list-style-type: none"> • Excavation and Earthwork • Foundations • Substructure Walls • Protection to Substructure Work | 15 |
| 7 | Superstructure Construction | <ul style="list-style-type: none"> • Walls • Columns and Beams • Floors • Formwork and Supports | 15 |

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| | | <ul style="list-style-type: none"> • Scaffolds and Scaffolding | |
| 8 | Roofs | <ul style="list-style-type: none"> • Types of Roof • Roof Covering Materials • Roof Construction | 10 |
| 9 | Stairs | <ul style="list-style-type: none"> • Types of stair • Construction of Stairs | 5 |
| 10 | Finishes and Fittings | <ul style="list-style-type: none"> • Floors Finishes • Wall Finishes • Doors and Door Frames • Windows and Window Frames Ironmongery • Ceiling • Paint and Painting | 5 |
| 11 | Building Services | <ul style="list-style-type: none"> • Drainage • Laying of Pipes in Drainage • Discharge Units in Drainage | 5 |
| 12 | Maintenance Practices in Buildings | <ul style="list-style-type: none"> • Types of maintenance work • Shores and Shoring | 5 |

BREAKDOWN OF CONTENT FOR BUILDING CONSTRUCTION GTLE

| S/N | CONTENT | COMPETENCIES | DESCRIPTIVE STATEMENT |
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| 1 | Introduction to Building Construction | <ul style="list-style-type: none"> a. Understand the types of buildings in Ghana. b. Know the degree of preparation and documentation carried out before site work | <ul style="list-style-type: none"> i. Identify the various types of buildings. ii. Describe the functions of buildings. i. Outline items involved in the building permit documents. ii. Explain the purpose of each of the items in building permit documents iii. Describe the processes involved in the preparation for building development permit. |
| 2 | Health and safety in Construction | <ul style="list-style-type: none"> a. acquire skills in workshop practices b. be aware of Site Welfare Procedures | <ul style="list-style-type: none"> i. Determine the safety conditions to be observe at site ii. Explain the need for observing health and safety at work site iii. Explain the causes of accidents at the building site iv. Explain the methods of accidents prevention at the building site. v. Identify first aid equipment at work site vi. Demonstrate the procedure to be taken for treatment of accident victims on site. |
| 3 | Preliminaries Site Operations | Understand preliminary Construction site operations such as site clearance, levelling and setting out. | <ul style="list-style-type: none"> i. Explain the term site clearance. ii. Explain the purpose of site clearance. iii. Explain site leveling and its importance. iv. State the leveling equipment. v. Explain the term “site layout” vi. Explain the purpose of site layout. vii. Describe the items in the site layout. viii. Explain the term “setting-out” in building construction ix. Outline the relevance of setting out. x. Describe the tools and equipment used in setting-out. |

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| | | Understand types of soil and their characteristics. | <ul style="list-style-type: none"> xi. Demonstrate the setting out of a simple rectangular building i. Identify types of soil. ii. Describe the characteristics of each type of soil. |
| 4 | Building and Construction Materials | <p>Acquire knowledge on building materials</p> <p>Demonstrate knowledge on materials used for damp proofing.</p> <p>Demonstrate knowledge of the use of local materials used in the building industry</p> | <ul style="list-style-type: none"> i. identify building materials ii. identify the characteristics of the building materials iii. outline concrete practices iv. List materials for making blocks and bricks. v. State mix ratios for types of blocks/bricks. vi. explain binding material in the building industry vii. explain the types of binding materials viii. explain the term damp proofing ix. outline the material used for damp proofing x. describe the purpose of damp proofing <ul style="list-style-type: none"> i. Identify local building materials. ii. Outline the uses of the local building materials iii. Explain the merit and demerits of the use of local materials |
| 5 | Construction Tools and Equipment | Demonstrate knowledge in the use of construction tools and equipment. | <ul style="list-style-type: none"> i. Outline the setting out and marking out tools ii. Describe the uses of the tools identified iii. Explain measuring tools and equipment iv. Outline the measuring tools used at site v. Identify cutting tools/equipment and write their uses vi. Identify construction machines and write their uses i. Explain the term 'care and maintenance' of construction tools and equipment |

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| | | Demonstrate understanding on the care and maintenance of the tools and equipment. | <ul style="list-style-type: none"> ii. Outline the various ways of caring and maintaining the tools iii. Explain the importance of caring for construction tools and equipment. |
| 6 | Substructure Construction | Demonstrate understanding in the substructure construction | <ul style="list-style-type: none"> i. Explain the term substructure in the building construction ii. Identify the various parts of a substructure iii. Outline the functions of the parts of a substructure iv. Explain the term excavation v. State the purpose(s) of excavation. vi. State the types of equipment for excavation. vii. State the uses of the types of excavation equipment. viii. Describe the types of excavation. ix. Explain the procedure for supporting the sides of a trench x. Identify types of foundation xi. Functions of the types of foundation xii. explain the factors which affect the bearing capacity of a subsoil xiii. Describe types of substructure walls. xiv. Describe some of the defects in substructure work. xv. Demonstrate the methods of protection against damages to substructure work. |
| 7 | Superstructure Construction | Recognize load and non-load-bearing wall Acquire skills in the use of columns and beams | <ul style="list-style-type: none"> i. Explain the term “wall” in superstructure. ii. Describe types of walls. iii. Explain the functions of the types wall. <ul style="list-style-type: none"> i. Describe methods of wall construction of each type of wall. ii. Demonstrate the methods of protecting the wall surface against weather erosion and physical damage. |

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| | | | <ul style="list-style-type: none"> iii. Compare the differences between load-bearing and non-load-bearing walls. iv. Describe the materials for load and Non-load bearing wall. v. Define the terms “column” and “beam”. vi. State the materials for columns and beams. vii. Explain the functions of column and beam. viii. Apply reinforcement steels to column and beam ix. Explain the term “floor.” x. describe types of floor xi. Explain the functions of types of floor in relation to their characteristics. xii. Differentiate between formation level and ground level. xiii. Explain the structural requirements of suspended floors. xiv. Explain the term „formwork”. xv. Select the materials used for the types of formwork the factors to be considered in constructing timber formwork. xvi. Demonstrate method of striking formwork xvii. Explain the term „scaffold”. xviii. Outline the types of scaffold. xix. Explain the uses of scaffolds. xx. Apply precautions necessary in the use of scaffolding. |
| 8 | Roofs | <p>Recognize types of roofs in building construction.</p> <p>Determine materials used for roof construction.</p> | <ul style="list-style-type: none"> i. Describe types of roofs with the aid of sketches. ii. Explain parts of roofs and their functions. iii. Explain the terms in roofs construction iv. Identify roofs covering materials v. Apply safety precautions to be observed during fixing of roofs covering. |

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| | | Acquire skills in roof construction. | <ul style="list-style-type: none"> vi. Demonstrate the methods of constructing roofs. vii. Apply measures for preventing uplift of roofs. |
| 9 | Stairs | <p>Acquire knowledge in stairs.</p> <p>Understand the fundamentals of stair construction</p> | <ul style="list-style-type: none"> i. Explain the term “stairs”. ii. Explain types of stair. iii. Describe the parts of stairs. iv. Explain the functional requirements of stair construction. |
| 10 | Finishes and Fittings | <p>Acquire knowledge of finishes and fittings</p> <p>Acquire skills in applying finishes and fittings</p> | <p>Floors Finishes</p> <ul style="list-style-type: none"> i. Identify types of floor finish. ii. Describe types of floor finish. iii. Describe the procedures for laying floor finishes. iv. Explain the advantages and disadvantages of types of floor finish <p>Wall Finishes</p> <ul style="list-style-type: none"> i. Identify types of wall finish. ii. Describe the characteristics of types of wall finish. iii. Explain the factors to consider in selecting wall finishes. iv. Demonstrate the methods of applying wall finishes. <p>Doors and Door Frames</p> <ul style="list-style-type: none"> i. Describe types of door frame and doors. ii. Explain the functions of doors. iii. Select type of door for a particular use. iv. Demonstrate the methods of constructing doors <p>Windows and Window Frames</p> <ul style="list-style-type: none"> i. Identify types of window. ii. Describe types of window and their frames iii. Explain the functions of windows. |

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| | | | <ul style="list-style-type: none"> iv. Describe the methods of constructing windows. v. Demonstrate the methods of preventing entry of moisture at joints in windows and window frames. <p>Ironmongery</p> <ul style="list-style-type: none"> i. Explain the term “ironmongery”. ii. Describe types of ironmongery. iii. Sketch types of ironmongery. iv. demonstrate the uses of types of ironmongery <p>Ceiling</p> <ul style="list-style-type: none"> i. Explain the term “Ceiling”. ii. Describe materials for ceiling. iii. Explain purpose of ceiling. iv. Explain the functions of the parts in ceiling construction. <p>Paint and Painting</p> <p>Explain the term: “painting”.</p> <p>Describe types of paint</p> <p>Explain functions of paints.</p> <p>Describe the procedures for preparing surfaces to receive paint.</p> <p>Explain the purpose of priming in painting.</p> <p>Demonstrate the use of tools/equipment for painting.</p> <p>Explain the defects in painting.</p> <p>Outline the remedies for defects in painting.</p> <p>Demonstrate the methods of painting.</p> |
| 11 | Building Services | 1. Be aware of the type of services provided in buildings. | <p>Drainage:</p> <p>Explain “drainage”.</p> <p>Explain the principles of Drainage.</p> <p>Describe the types of drainage scheme.</p> |

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| | | <p>2. Recognise the provision of building services.</p> <p>3. Appreciate the importance of safety precautions.</p> | <p>Explain the factors to consider in selecting a type of drainage scheme.</p> <p>Describe the materials for a drainage system</p> <p>Laying of pipes in Drainage: Explain with the aid of sketches the methods of joining pipes. Describe the functions of Traps. Explain the functions of an inspection chamber. Demonstrate the methods of laying and bedding drain pipes. Demonstrate methods of testing drains.</p> <p>Discharge Units in Drainage: Explain the term cesspool Explain the functions of soak away pit. Demonstrate the methods of constructing manholes. Demonstrate the method of constructing septic tank.</p> |
| 12 | Maintenance Practices in Buildings | Appreciate the importance of maintenance work. | <ol style="list-style-type: none"> i. Explain the term “maintenance” in building construction. ii. Explain types of maintenance work. iii. Describe works involved in maintenance. iv. Analyze the importance of maintenance work. <p>Shores and Shoring</p> <ol style="list-style-type: none"> 1. Explain the term „shoring“. 2. Describe the types of shore used in building construction. 3. Demonstrate the methods of erecting each type of shore. 4. Demonstrate the precautions to be taken when installing shores. |

TABLE OF SPECIFICATION

| S/N | Content Areas | Course Objectives/Outcomes (Depth of knowledge) | | | | |
|-----|------------------------------------------|--------------------------------------------------|-------------------------------------|--------------------------------|-----------------------------------|-------|
| | | Level 1 (recall) | Level 2 (skills and concepts) | Level 3 (strategy thinking) | Level 4 (extended thinking) | Total |
| 1 | Introduction to Building Construction | 2 | 2 | 1 | 1 | 6 |
| 2 | Health and safety in Construction | 2 | 3 | 1 | 2 | 8 |
| 3 | Preliminaries Site Operations | | 2 | 2 | 3 | 7 |
| 4 | Building and Construction Materials | 1 | 2 | 3 | 3 | 9 |
| 5 | Construction Tools and Equipment | 2 | 2 | 3 | 3 | 10 |
| 6 | Substructure Construction | 2 | 3 | 5 | 5 | 15 |
| 7 | Superstructure Construction | 2 | 3 | 5 | 5 | 15 |
| 8 | Roofs | 1 | 3 | 2 | 2 | 8 |
| 9 | Stairs | 1 | 1 | 2 | 1 | 5 |
| 10 | Finishes and Fittings | | 2 | 2 | 1 | 5 |
| 11 | Building Services | 1 | 1 | 2 | 2 | 6 |

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| 12 | Maintenance Practices in Buildings | 1 | 1 | 2 | 2 | 6 |
| | TOTAL | 15% | 25% | 30% | 30% | 100 |