Diploma in Construction and Building Technology

For Students admitted from 2015-2016 onwards

Semester - I

S.No	COURSE CODE	COURSE TITILE	HRS	CREDITS	MAX MARKS		
					INT/ Theory	EXT/ Practical	тот
1	G001	Basic English	60	4	50	50	100
2	G002	Basic Mathematics	60	4	50	50	100
3	G003	Computer Fundamentals	60	4	50	50	100
4	CON/ N 0125	Read and interpret specification, standards and schematic working drawings for wet finishing and flooring works	270	18	40	60	100
5	CON/ N 0126	Ensure execution of wet finishing works as per specifications and standard practices			40	60	100
6	CON/ N 0127	Ensure execution of flooring and cladding works as per specifications and standard practices			40	60	100
7	CON/ N 7001	Plan, arrange and manage resources for execution of relevant work			40	60	100
Total			450	30	-	-	700

Semester - II

S.No	COURSE CODE	COURSE TITILE	HRS	CREDITS	MAX MARKS		
					INT/ Theory	EXT/ Practical	тот
1	G004	Communicative English	60	4	50	50	100
2	G005	Office Automation	60	4	50	50	100
3	G006	Value Education	60	4	50	50	100
4	CON/ N 8001	Work effectively in a team to deliver desired results at the workplace			40	60	100
5	CON/ N 8002	Plan and organize work to meet expected outcomes			40	60	100
6	CON/ N 8003	Supervise, monitor and evaluate performance of subordinates at workplace	270	18	40	60	100
7	CON/ N 9001	Work according to personal health, safety and environment protocol at construction site			40	60	100
Total			450	30	-	-	700

Course: Diploma in Construction and Building Technology

Subject Code: G001

Subject: Basic English

Unit-I

Parts of speech Verb – Auxiliary verbs Model verbs

Unit-II

Phrase, Clause and Sentence Present tense Past tenses.

Unit-III

Future tense Subject – verb agreement Sentence patterns

Unit-IV

Note – making Report writing Reading comprehension.

Unit-V

Soft skills: Reading loud – conversation – personality development – body language – pronunciation – common errors.

Text Books:

- 1. High School English Grammer, Wren and Martin, Sultan Chand Publications, New Delhi.
- 2. Effective English communication for you, Syamala V.

Course: Diploma in Construction and Building Technology

Subject Code: G002

Subject: Basic Mathematics

Unit-I

SET AND FUNCTIONS: Introduction - Properties of operations on sets - De Morgan's laws-verification examples – Venn diagrams – formula for n(AUBUC) – Functions.

Unit-II

SEQUENCES AND SERIES OF REAL NUMBERS: Introduction – Sequences – Arithmetic Progression (A.P) – Geometric Progression (G.P.) – Series.

Unit-III

ALGEBRA: Solving Linear Equations – Polynomials – Synthetic division – Greatest Common Divisor (GCD) – Least Common Multiple (LCM) – Rational Expressions – Square root – Quadratic equations.

Unit-IV

MATRICES: Introduction – Types of Matrices – Addition and Subtraction – Multiplication – Matrix equation.

Unit-V

COORDINATE GEOMETRY: Introduction – Revision: division between two points – Section formula, mid point formula, Centroid formula – Area of triangle and quadrilateral – straight line.

Text Books:

1. Basic Mathematics, Science Series Rupa, Rupa Publications, 2011.

Course: Diploma in Construction and Building Technology

Subject Code: G003

Subject: Computer Fundamentals

Unit-I

MICROSOFT WINDOWS 7: Exploring windows 7 desktop – using the mouse – scrolling, maximizing, minimizing and closing window – using aero snaps, Windows start menu - opening program – displaying and peeking at desktop – switching between programs – managing the windows taskbar.

Unit-II

Working gadgets – managing drives with computer explorer – using menus, toolbars and ribbons – changing desktop theme, color, screensaver, background, slideshow.

Unit-III

WORKING WITH FILES AND FOLDERS: Windows explorer – Changing the way files are displayed – sorting files and folders - navigating folders with navigation pane – creating, renaming, copying, renaming, moving, deleting restoring folders – Working with libraries – creating library – compressing and extracting a file.

Unit-IV

BROWSING THE WEB: Internet Explorer - Surfing the Web with Internet Explorer - Saving Your Favorite Pages - Returning to a Favorite Page - Revisiting History - Searching the Web with Google -Finding News and Other Information Online - Shopping for Bargains at Shopping.com - Bidding for Items on eBay - Buying Items on craigslist - Selling Items on craigslist - Watching Web Videos on YouTube - Uploading Your Own YouTube Videos.

Unit-V

COMMUNICATING ONLINE: Gmail - Setting up a Gmail Account - Reading an email message - Replying to an Email message - Composing a new email message - Sending a file via email - Managing Gmail messages - Adding Gmail contacts.

Text Book:

1. Michael Miller, Easy Computer Basics Windows 7 Edition, Pearson Publication, First Edition, 2011.

Course: Diploma in Construction and Building Technology Subject Code: CON/ N 0125

Job Role: Read and interpret specification, standards and schematic working drawings for wet finishing and flooring works

Unit-I

Guidelines for Building Drawing - Plan, Elevation and Sectional drawings - Architectural drawing - Principles of measurement, Arithmetic and geometric calculations - Linear conversion of units – Units of Measurements.

Unit-II

Introduction – Types of Flooring – Tools required flooring work – Material specifications and its checking – The understand & follow manufactures specification for flooring and cladding works with different tiles and stones – Calculation for required quantity of material from schematic working drawing.

Unit-III

- i. Practice Layout of drawings and Title block
- ii. Practice to lines of Drawings, lettering and Numbering.
- iii. Practice to method of dimensioning in the various drawing
- iv. Reading of Architectural drawing (Plan, Section, Elevation).

Unit-IV

i. Practice given to the Tools used in the masonry work (brick, stone, flooring, plastering, concrete).

- i. Practice given to the Conversion of units and measurements.
- ii. Practice given to the Calculation for quantity of material required for the given drawing

Course: Diploma in Construction and Building Technology Subject Code: CON/ N 0126

Job Role: Ensure execution of wet finishing works as per specifications and standard practices

Unit-I

Sequence of construction of a building – Name of different parts of building – Masonry – brick masonry – Principal of construction of bonds – Tools and Equipment used – stone masonry – terms used – Principal of construction – Classification , composite masonry and strength of walls – concrete block masonry.

Unit-II

Plastering – materials required for plastering - Tools required for plastering – Types of plaster – Internal plaster – External plaster – Defects in plastering work and Remedies for the same – Precautionary measures to avoid cracks in plastering.

Unit-III

Water proofing – Introduction – materials required for water proofing & its specifications – Tools required for water proofing – working procedure & stage of work of water proofing for – water proofing expansion joint – procedure for glazed china mosaic / kavadi type water proofing for terrace – work procedure for socketing – use of chemical for water proofing work – repairs & maintenance in water proofing –various types of finishes – grit wash – aggregate wash – stone – crete , cement wash – specifications.

Unit-IV

- i. Preparation of mortar (Cement, lime, Mud) by hand & machine mixing .
- ii. Arrangement of brick using English bond in one brick thick wall, one and half brick thick wall on Tee Junction.
- iii. Arrangement bricks using English bond in one brick thick square pillars, one and half brick thick pillars.
- iv. Arrangement brick using Flemish bond in half brick wall and two brick thick square pillars.
- v. Construction of hollow bricks wall using stretcher bond.
- vi. Construction of wall by using a stone in coursed & random rubble masonry.

- i. Using a various types of mortar for Plastering in the wall and practice.
- ii. Construction practice of laying tiles, marble, granite and other Natural stones.
- iii. Construction practice of laying weathering course in the water proofing works.
- iv. Construction practice in curing of different works in Cement plastered surfaces.
- v. Construction practice of different surface finishes like grit wash, stone crete, cement wash and ornamental plastering works.

Course: Diploma in Construction and Building Technology Subject Code: CON/ N 0127

Job Role: Ensure execution of flooring and cladding works as per specifications and standard practices

Unit-I

Procedure for flooring work – Information at a Glance for flooring work – Architectural drawing and basic principles of all flooring works with natural stones – the ratio of cement mortar mix used for various flooring works – standard tolerance limits for flooring works – methodology for various flooring works – Methods of curing of different flooring works – safety rules and regulations for handling and storing required tools, equipment and materials.

Unit-II

Procedure Polishing work – Preparation & Procedure for Cladding / Dado work – Information at a Glance for Dado work – Architectural drawing and basic principles of all cladding works with natural stones - the ratio of cement mortar mix used for various cladding works - standard tolerance limits for cladding works – Methodology for dry and wet cladding works – the use of mechanical ties and anchor clip for dry and wet cladding – the use of anchoring tools for cladding works – the standard methods of fixing stones using specified mortar for bonding in case of wet cladding works – Methods of curing of different cladding works.

Unit-III

Construction practice for the following major finishes in flooring works

- i. Vacuum dewatered flooring (VDF)
- ii. Terrazzo (marble chips) flooring
- iii. PVC sheet flooring
- iv. Carpet flooring
- v. Wood/ Timber flooring
- vi. Marble flooring
- vii. Mosaic flooring
- viii. Rubber and Linoleum flooring

Unit-IV

- 1. Construction practice for the polishing of surface after laying of tiles, marble, granite or other natural stones.
- 2. Practice for the construction joint by using the flooring works.
- 3. Practice for the Tiles and natural stones are measured & cut as per the design/patterns and specifications.

- 1. Practice the standard methods for fixing stones using specified mortar for bonding in case of wet cladding works.
- 2. Practice for the grouting and sealing of stones as per specifications.
- 3. Construction Practice for the curing of cladding and flooring works.

Course: Diploma in Construction and Building Technology Subject Code: CON/ N 7001

Job Role: Plan, arrange and manage resources for execution of relevant work

Unit-I

Resource Planning, Procurement, Identification, Personnel, Planning for material, Labour, time schedule and cost control, Types of resources, manpower, Equipment, Material, Money, Time.

Unit-II

Systems approach, Characteristics of resources, Utilization, measurement of actual resources required, Tools for measurement of resources, Labour, Classes of Labour, Cost of Labour, Labour schedule, optimum use Labour.

Unit-III

Material: Time of purchase, quantity of material, sources, Transportation, Delivery and Distribution. Equipment: Planning and selecting by optimistic choice with respect to cost, Time, Source and handling.

Unit-IV

Personnel time, Management and planning, managing time on the project, forecasting the future, Critical path measuring the changes and their effects – Cash flow and cost control.

Unit-V

Time-cost trade off, Computer application – Resource leveling, resource list, resource allocation, Resource loading, Cumulative cost – Value Management.

Course: Diploma in Construction and Building Technology

Subject Code: G004

Subject: Communicative English

Unit-I

Articles and Determiners Kinds of Noun and Adjectives Kinds of Sentences

Unit-II

Transformation of Sentences

- 1. Direct speech and Indirect speech
- 2. Active and Passive
- 3. Degrees of comparison

Unit-III

Message through E-mail and Fax Advertisement Notice, Agenda and Minutes Précis writing

Unit-IV

Letter writing: Structure – Style – Complaint letter – Job application – Bio date/Curriculum Vitae – Resume – Informal letter

Unit-V

Conversational English

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Greeting – Introducing – Requesting – Inviting – Congratulating – Thanking – Permission – Apologizing – Asking to repeat – Asking for information
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Text Books:

1. High School English Grammer, Wren and Martin, Sultan Chand Publications, New Delhi.

2. Effective English communication for you, Syamala V.

Course: Diploma in Construction and Building Technology

Subject Code: G005

Subject: Office Automation

Unit-I

BASIC COMPUTER SKILLS: Identifying Major Computer Components - How Computers Work - Turning on the Computer and Logging On - OPERATING SYSTEMS AND SOFTWARE – INTERNET.

Unit-II

WORD: Introduction to Word Processing: Basic features – Full-Featured word processors – starting word – menus and toolbars – creating, editing and saving a word document – using word help – opening a document – moving multiple text selections simultaneously – link documents – creating table – working with graphics – mail merging – previewing and printing document.

Unit-III

EXCEL: electronic spreadsheets – spreadsheet packages – starting excel – navigating in a workbook – create, name and save a new workbook – data entry-manual and automatic – correcting mistakes-spelling checker, undo and redo changes.

Unit-IV

POWERPOINT: Presentation basics – presentation packages – starting PowerPoint – menus and toolbars – opening and saving an existing presentation – presentation using auto content wizard – presentation using design template – creating and saving a presentation using blank presentation.

Unit-V

MS ACCESS: Use of MS Access – Controls – Customization – database design – filtering and sorting - conversation – database basics – import and export – forms – reports.

Text Book:

1. Alexis Leon, Mathews Leon, Introduction to Computers with MS-Office, Tata McGraw Hill Publication, 2003.

Course: Diploma in Construction and Building Technology

Subject Code: G006

Subject: tpGkpaf;fy;tp(Value Education)

Unit-I

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<u>fUjjhff' fs;</u>

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3. <u>bfhsj ffSk;nfhlghLfSk;</u> gµkk tjij (vyyh fytpfSfFk; moggi lahdJ) - \yffytp - Mjk tjij (jdi d cz Uk;fytp) - nky;ehl th]nfhlghLfs;-, akk;(braaf;Tlhjit-10) - epakk;(braaf; Toait-16) - cybfhLxl txGfy;-jpU\yh]tssyhh]

Unit-II

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2. <u>tpGkpaf;fytpapd;njit</u>

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3. <u>tpGkpaf;fy;tpapd;njitFwg;JRthkptpntfhdejh</u>]

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Unit-III

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jdpkdpj tshjjp - xGffk; Rajhkhdk; (RaxG'iftiuaWj;Jf;bfhssy) cly/ kdk/thfFnghwWjy; bgwnwhiug]nghwWjy; FLkgcwtpy;nkdik

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jdpkdmj tshjp-rKjhatsik-ehlod;tsik-gmehlnlhLey;Ywt[

Unit-IV

tpGkpar]rpejidahshfspd;fUj;JffSk;rKjhatshj]pak;

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Unit-V

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- 1. <u>cyfwFg]bghJthdtpGkpak;</u> mdg[-kf;fs;ngz y;-gwh]fFcjt[y;-, awi fts';fi sg]ghJfhjjy;-gw
- 2. <u>cyftpGkpajijtsh]jy</u>; xdnw Fyk; kj xUi kghL – gwh]gz ghlilg]nghwWjy;
- 3. <u>cyftpGkpajijg]ghJfhffr]braantzoad;</u> kjf;nfhlghLfiskjpjjy;-rhjpkjntWghlwwey;Ywt[f;bfhssky;-ngrRj;jh]t VwgLjjy;-rfpg]j;jdik-J}J-xUehlLtpGkpajijg]gwehl!th]f;Fg]nghjpjy; -cyfk;jGtpabghJtpGkpaf;fy;tpiag]nghjpjy;

Course: Diploma in Construction and Building Technology Subject Code: CON/ N 8001

Job Role: Work effectively in a team to deliver desired results at the workplace

Unit-I

Communication – The importance of communication – Basics of organizational communication –Superior and sub – ordinate communication – the verbal and non verbal language of work.

Unit-II

Cross Cultural communication –Language difference – Nonverbal communication across cultures – Etiquette and politeness across cultures – social conventions across cultures – personal approaches to improving – basic principles of effective and cross cultural communication.

Unit-III

Resource productivity control: Labor productivity control, material wasting control, control responsibility.

Unit-IV

Project time control: Time monitoring methodology, reviewing time progress, time cost relationship.

Unit-V

Manpower Requirement on the basis of quantum of work and productivity – Sequence and priority of activities – Provide clear instruction to workmen for execution of work – Method and technique on briefing team members about relevant work – The different check to evaluate progress and quality of relevant works – The importance of daily productivity report and attendance register.

Course: Diploma in Construction and Building Technology Subject Code: CON/ N 8002

Job Role: Plan and organize work to meet expected outcomes

Unit-I

Basic Concepts in the Development of Construction Plans – Choice of Technology and Construction Method – Defining Work Tasks – Defining Precedence Relationships among Activities – Estimating Activity Durations – Estimating Resource Requirements for Work Activities – Coding Systems.

Unit-II

Types of Project Information – Accuracy and Use of Information – Computerized Organization and Use of Information – Organizing Information in Databases – Relational Model of Databases – Other Conceptual Models of Databases – Centralized Database Management Systems – Databases and Applications Programs – Information Transfer and Flow.

Unit-III

Overview of IT Applications in Construction – Construction process – Computerization in Construction – Computer aided Cost Estimation – Developing application with database software.

Unit-IV

PERT and CPM - Advanced planning and scheduling concepts – Computer applications – Case study.

Unit-V

Linear, Dynamic and Integer Programming - Branch and Bound Techniques – Application to Production Scheduling, Equipment Replacement, Material Transportation and Work Assignment Problems – Software applications.

Course: Diploma in Construction and Building Technology Subject Code: CON/ N 8003

Job Role: Supervise, monitor and evaluate performance of subordinates at workplace

Unit-I

The role of the supervisor - The scope and importance of verbal communication The various job site personnel issues - Identify the supervisor's role in safety - Manage and estimate the cost of tools and materials - Describe the importance of leadership in effective supervision.

Unit-II

Basic individual psychology – Approaches to job design and job redesign – Self managing work teams – Intergroup – Conflict in organizations – Leadership-Engineer as Manager – al aspects of decision making – Significance of human relation and organizational – Individual in organization – Motivation – Personality and creativity – Group dynamics, Team working – Communication and negotiation skills.

Unit-III

Organizational policies and Procedures.

Unit-IV

- 1. The fix expected targets for the respective gang as per site requirements and allocate work to subordinates.
- 2. The establish expected performance standards and expectations for the respective gang of workers to meet the desired outcomes.
- 3. The inspect assigned work to the respected gang of workers through progressive checking.

- 1. Observe and verify the work activities performed by the subordinates at the construction site.
- 2. The monitor over all performance of subordinates on the designed measures to ensure quality requirements set by the concerned authority.
- 3. The ensure adherence to the organizational polices and procedures for all relevant construction activities by the workmen subordinations.

Course: Diploma in Construction and Building Technology Subject Code: CON/ N 9001

Job Role: Work according to personal health, safety and environment protocol at construction site

Unit-I

Introduction – Importance of Safety – Causes of Accidents – Classification of Construction Accidents – Responsibility for safety – Safety measure – Role of various Parties in safety Management – Safety benefits to Employers, Employees and Customers – Approaches to improve safety in construction – Salient points of safety management – safety Programs – Contract Requirements – Safety Guidelines for Personnel Conduct – Measurement of safety – Ergonomics applied to the construction industry – prevention of fires at construction sites – Indian standards for safety in construction.

Unit-II

Safety and health training and competence – training for safety and health – identify training needs – Organizational needs ,Job related needs , individual needs , identify training objectives and methods , Deliver training , Evalution and feedback , specialist advice and services – Access to specialist advice and services , relationships within the Organization , relationships outside the organization , external specialist safety support.

Unit-III

Personal Protective Equipment (PPE) - Foot Protection – Head Protection – Ear protection – Fall protection – Face and Eye protection – hand and body Protection – Hazardous materials – preventive measures – Control measures – Management of major Hazards.

Unit-IV

Waste Management – General Waste management – Waste management Planning – Waste prevention – Recycling and Reuse – Treatment and Disposal - Hazardous waste Management -Waste Storage – Transportation – Treatment and Disposal.

Unit-V

Visit to Construction site – Erecting and dismantling scaffolding for single storied – Multi storied buildings – Demonstration of safety harness and ladders – Showing how to use power tools and hand tools safety – Conducting tool box meeting – mock drill (falling from height) -Awareness about site evacuation plan – Safe way to material handling