

MAHARASHTRA STATE BOARD OF VOCATIONAL EDUCATION EXAMINATION, MUMBAI

1	Name of Syllabus	C. C. IN BUILDING SERVICES (304206)																																																														
2	Max.Nos of Student	25 Students																																																														
3	Duration	1 year																																																														
4	Type	Part Time																																																														
5	Nos Of Days / Week	6 Days																																																														
6	Nos Of Hours /Days	4 hrs.																																																														
7	Space Required	Practical Lab = 300 sqfeet Class Room = 200 sqfeet TOTAL = 500 sqfeet																																																														
8	Entry Qualification	S.S.C. pass																																																														
9	Objective Of Syllabus/ introduction	i) Understand various services needed for building ii) Execute the maintenance work in building iii) Identify the defects and rectify it for plumbing system and masonry work. iv) Use various construction chemicals at appropriate place in desired area.																																																														
10	Employment Opportunity	Self employment/ Can work as Maintenance Contractor Wage Employment can work as a Site Supervisor																																																														
11	Teacher's Qualification	Diploma in Civil Engineering with One year Site experience H.S.C. Vocational in Building Maintenance with three years experience																																																														
12	Training System	<table><tr><th colspan="7">Training System Per Week</th></tr><tr><td>Theory</td><td>Practical</td><td colspan="5">Total</td></tr><tr><td>6hrs</td><td>18hrs</td><td colspan="5">24hrs</td></tr></table>							Training System Per Week							Theory	Practical	Total					6hrs	18hrs	24hrs																																							
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13	Exam. System	<table><tr><th>Sr. No.</th><th>Paper Code</th><th>Name of Subject</th><th>TH/PR</th><th>Hours</th><th>Max. Marks</th><th>Mini. Marks</th></tr><tr><td>1</td><td>30420611</td><td>Building Materials</td><td>TH-I</td><td>3 hrs.</td><td>100</td><td>35</td></tr><tr><td>2</td><td>30420612</td><td>Construction Process</td><td>TH-II</td><td>3 hrs.</td><td>100</td><td>35</td></tr><tr><td>3</td><td>30420613</td><td>Building Services</td><td>TH-III</td><td>3 hrs.</td><td>100</td><td>35</td></tr><tr><td>4</td><td>30420621</td><td>Building Materials</td><td>PR-I</td><td>3 hrs.</td><td>100</td><td>50</td></tr><tr><td>5</td><td>30420622</td><td>Construction Process</td><td>PR-II</td><td>3 hrs.</td><td>100</td><td>50</td></tr><tr><td>6</td><td>30420623</td><td>Building Services</td><td>PR-III</td><td>3 hrs.</td><td>100</td><td>50</td></tr><tr><td></td><td></td><td>TOTAL</td><td></td><td></td><td>600</td><td>255</td></tr></table>							Sr. No.	Paper Code	Name of Subject	TH/PR	Hours	Max. Marks	Mini. Marks	1	30420611	Building Materials	TH-I	3 hrs.	100	35	2	30420612	Construction Process	TH-II	3 hrs.	100	35	3	30420613	Building Services	TH-III	3 hrs.	100	35	4	30420621	Building Materials	PR-I	3 hrs.	100	50	5	30420622	Construction Process	PR-II	3 hrs.	100	50	6	30420623	Building Services	PR-III	3 hrs.	100	50			TOTAL			600	255
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Curriculum :-

Sr.NO.	THEORY – I - Building Materials	Practical - I - Building Materials
1)	Building Industry – building Industry & the agencies associated with it such as owner, architect, structural engineer, contractor, material supplier, financial institutions, service providers etc. with their respective roles & responsibilities Govt./ Semi Govt./ Private Participation in building industry along with their organization ,management function. (20)	Study of owner, architect, structural engineer, contractor, material supplier, financial institutions, service providers etc. with their respective roles & responsibilities Govt./ Semi Govt./ Private Participation
2)	Building components – Foundation plinth, wall column, beam , roofs, floor, chajza, Lintel , staircase, parapet, doors, windows etc. (20)	Owner of Building components – Foundation plinth, wall column, beam , roofs, floor, chajza, etc & their sketches.
3)	Building Types – Types of building , residential, commercial, etc. types of structures such as substructure, superstructure, load bearing , framed structure, etc. Building Components & load distribution mechanism in building. (20)	Types of Structure load bearing ,framed structure etc. load distribution
4)	Building Materials – use of building Materials such as brick, stone, cement, aggregate, water motor, concrete, construction ion chemicals, timber, glass, steel, Bitumen, Plasticizers, super plasticizers, special products etc. in construction of building components . (20)	Study of use of building material & their construction of building components.
5)	Construction Processes – Masonary work , concreting work, reinforcement positioning & placement, shoring strutting & under priming processes, form work etc.	Engineering drawing of masonry work concreting work, reinforcement positioning & placement storing strutting & under priming processes form work.
	Method of joining of building components & the precaution involved in constructing & costing work. (20)	Types of joint in building components & their precaution.

Sr.NO.	Theory – II Method Of Construction	Practical- II – Method Of Construction
1)	Concrete types, method of preparations , method used, prepositions, grading of concrete & their applications , equipments used in concreting, processes involved in construction chemicals , & their applications. (20)	Study of method of preparation of concrete & grading , applications , equipments their sketches chemicals used in concreting .
2)	Building Planning – Factors affecting building , planning, study of a building plan & semiar layout for a building (20)	Layout of services providing for construction & study.
3)	Quantity surveying & costing modes of measurement for various components finding quantities for various operations, simple numerical on computation of quantity of materials needed for various construction process.	Find out quantities of various building items. Quantity surveying & costing.

Sr.NO.	Theory – III - Building Services	Practical- III – Building Services
4)	Building services – Introduction to plumbing, water supply & sewage disposal , lifts,water proofing & construction chemicals,thermal insulation aeroustic ,ventilation & air conditioning , provision of various amenities such as ask swimming pool landscaping, pest control services , illumination interior & exterior designing paining etc. co-ordination of various agencies. (20)	Study of varius chemicals used in construction .Basic plumbing ,water proofing chemicals , painting (interior & exterior)
5)	Project Work – Compulsory project work in one of the following areas . (a) Plumbing – water supply & sewage disposal . (b) water proofing & construction chemicals . (c) Pest Control services (d) Electrical – Installation for a small house . (e) Painting (f) Elevator Maintenance. The project must be based on live example including study of various resources needed to complete the project work. (20)	Engg. Drawing 1) Plumbing 2) Electrical symbols 3) Water supply & sewage 4) Study of water proofing , construction chemicals, painting , Elevator maintenance.

Books recommended

- 1] Construction materials – D. N. DUGGAL [Tata Mc qraw Hill]
- 2] Building Construction- S. C. RANGWALA [character publication]
- 3] A to Z Of Building construction-Mantri construction / Mantri publication
- 4] Building construction system- M.P.DESHMUKH- Nirali prakashan.
- 5] National building -- Govt.publication.
- 6] Building Drawing –B. S. DESHMUKH –Nirali prakashan.
- 7] Estimating and Costing .-Mr .CHAKRABORTY --
- 8] Essentials of Building maintain.—VASANT KALBAJ – Taxmaco- Book Agencies.
- 9] Chemical admixtures for concrete.—H. R. RIXOM—Powellj books.
- 10] Civil Engineering Drawing –MALIKA MAYO – New Asian publisher .
