MERI College of Engineering & Technology
(MERI-CET)

Session: 2018-2019 **Course: B.Tech**
Department: Civil Engineering **Semester: 3rd**
Subject: BCM, CE-203-F **Faculty name: Vaibhav Chawla**

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FOCAL POINTS

1. The main objective in the very beginning classes of this subject is to provide basis knowledge regarding this subject.
2. After that we will move to our university syllabus. We will start from section one.
3. Laboratory Experiments will be conducted regularly (one lab per week).
4. Group discussion will be organized to remove hesitation of students.
5. Website links will be provided to student for getting recently developed fundamentals related to subject.
6. Regular class tests will be conducted to check the performance of students.
7. We will finish the entire syllabus within designed time duration, so that we may get time for revision work.
8. All the sections of syllabus will be given equal and maximum
9. Class room as well as power point presentations will be taken from students regularly.
10. Student Doubts will be cleared by managing some extra classes.
11. Stress will be given on practical and field knowledge , which will be the master success key for student.

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TEACHING METHODOLOGY

COURSE OBJECTIVE

A complete study about all the properties of soil and every law involved in it ,is called soil mechanics. The main objective of this subject is to provide knowledge about formation of soil ,its properties and ho it bears load ,which is applied directly on soil surface.

METHODOLOGY

The Procedure will be lectures, presentations, Tutorials, Tests, assignments of class work and Practicle Labs.

ACHIEVEMENT

At the end of semester, students will have a detailed knowledge of Soil , its basic properties and different forces acting on the soil.

EVALUATION

Besides the semester end – examination, the students will be continuously assessed during the course on the following basis

i. Mid Term Examinations 30 Marks

ii. Internal Assessment 20 Marks (Assignments +Attendance)

Iii End Semester Examination 100 Marks

Total : 150 Marks

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SYLLABUS AS PER MDU

SECTION-A

Unit-I: Masonry Construction Introduction, various terms used, stone masonry-Dressing of stones, Classifications of stone masonry, safe permissible loads, Introduction to green building concept and methods, Brick masonry-bonds in brick work, laying brick work, structural brick work-cavity and hollow walls, reinforced brick work, Defects in brick masonry, composite stone and brick masonry, glass block masonry.

Unit-II: Cavity and Partition Walls Advantages, position of cavity, types of non-bearing partitions, constructional details and precautions, construction of masonry cavity wall.

Unit-III: Foundation Functions, types of shallow foundations, sub-surface investigations, geophysical methods, general feature of shallow foundation, foundations in water logged areas, design of masonry wall foundation, introduction to deep foundations i.e. pile and pier foundations.

SECTION-B

Unit-IV: Roofs and Floors Types of roofs, various terms used, roof trusses-king post truss, queen post truss etc. Floor structures, ground, basement and upper floors, various types of floorings.

Unit-V: Doors and Windows Locations, sizes, types of doors and windows, fixtures and fasteners for doors and windows.

SECTION-C

Unit-VI: Damp-Proofing and Water-Proofing Defects and causes of dampness, prevention of dampness, materials used, damp-proofing treatment in buildings, water- proofing treatment of roofs including pitched roofs.

Unit-VII: Acoustics, Sound Insulations and Fire Protection Classification, measurement and transmission of sound, sound absorber, classification of absorbers, sound insulation of buildings, wall construction and acoustical design of auditorium, fire-resisting properties of materials, fire resistant construction and fire protection requirements for buildings.

SECTION-D

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Unit-VIII: Material for green building,Stones Classification, requirements of good structural stone, quarrying, blasting and sorting out of stones, dressing, sawing and polishing, prevention and seasoning of stone.

Unit-IX: Brick and Tiles Classification of bricks, constituents of good brick earth, harmful ingradients, manufacturing of bricks, testing of bricks,Bricks prepared from fly ash. 7 Tiles: Terra –cotta, manufacturing of tiles and terra-cotta, types of terra-cotta, uses of terra-cotta.

Unit-X: Limes, cement and mortars Classification of lime, manufacturing, artificial hydraulic lime, pozzolona, testing of lime, storage of lime, cements composition, types of cement, manufacturing of ordinary 5asonite cement, testing of cement, special types of cement, storage of cement. Mortars: Definition, proportions of lime and cement mortars, mortars for masonry and plastering.

Unit-XI: Timber Classification of timber, structure of timber, seasoning of timber, defects in timber, fire proofing of timber, plywood, fiber boards, 5asonite and its manufacturing, important Indian timbers.

Unit-XII: Paints and Varnishes Basic constituents of paints, types of paints, painting of wood, constituents of varnishes, characteristics and types of varnishes.

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Name of the Faculty	:	Mr Vaibhav Chawla
Discipline	:	Civil Engineering
Semester	:	3rd
Subject	:	BCM, CE-203-F
Lesson Plan Duration	:	15 Weeks (From August 2018 to November 30)
Work load (Lectures/Practical)		
Per week (in hours)	:	Lectures-04, Practicals-02

WEEK	THEORY		PRACTICAL	
	LECTURE DAY	TOPIC (including assignment /test)	PRACTICAL DAY	TOPIC
1ST	1st	Introduction to the subject, the construction material	1st	Introduction for drawing on Sheets and to perform drawing on sheets
	2nd	Masonry Constructions, various terms like stone masonry or dressing of stones, Classification of stone masonry		
	3rd	Safe permissible loads, Introduction to green building concept		
	4th	Methods of green building concept, introduction to brick masonry		
2ND	5th	Bonds in brick work, laying brick work, structural brick work- Cavity and hollow walls	2nd	Drawings of bricks, drawing of walls
	6th	Reinforced brick work, Defects in brick masonry, composite stone and glass block masonry		
	7th	Cavity and partition walls, Advantages, position of cavity		
	8th	Types of non bearing partitions, Construction details and precautions, construction of masonry cavity walls		
3rd	9th	Introduction to the foundations,	3rd	Drawing of cavity

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		Functions of the foundations, Types of shallow foundation		walls
	10th	Geophysical methods and general features of shallow foundations, Foundation in water-logged areas		
	11th	Design of masonry wall foundation, introduction to deep foundation i.e. pile and pier foundations		
	12th	**TEST FOR THE SECTION (SECTION-A)**		
4th	**13th**	Introduction to roofs and floors, types of roofs, and various terms	**4th**	Another type of cavity wall drawing
	14th	Roof trusses- King post truss, queen post truss, Floor structures		
	15th	Ground basement and upper floors and various types of flooring		
	16th	Introduction to doors and windows, Location and sizes		
5th	**17th**	Types of doors and windows, fixtures and fasteners of doors and windows	**5th**	Drawing of cavity wall
	18th	**TEST FOR THIS SECTION (SECTION-B)**		
	19th	Introduction to damp proofing and water proofing, Definition of Dampness		
	20th	Defects and causes of dampness, Prevention of dampness		
6th	**21st**	Materials used, The treatment of Damp proofing in building	**6th**	Drawing of Bonds in Brick work for example; English bond and Flemish bond
	22nd	Water proofing treatment of roof including pitched roofs		
	23rd	Introduction to Acoustics, Sound insulation and Fire protection,		
	24th	Classification of acoustics		
7th	**25th**	Measurements and Transmission of sound,	**7th**	**SESSIONAL-I EXAMINATION**
	26th	Sound absorbers		
	27th	Classification of sound absorbers		
	28th			

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8th	**29th**	Insulation	**8th**	Drawing of foundations for example; PILE, Shallow Foundations
	30th	Sound insulation of buildings		
	31st	Wall construction and acoustical design of auditorium		
	32nd	Fire resisting properties of material		
9th	**33rd**	Fire resisting construction and fire protection for buildings	**9th**	Drawing of grillage foundation
	34th	**TEST FOR THIS SECTION (SECTION-C)**		
	35th	Introduction to the green buildings & stones and their materials		
	36th	Classification, Requirements of good structural stone		
10th	**37th**	Blasting and sorting out of stones, dressing	**10th**	Ground Floor plan drawing
	38th	Sawing, polishing, prevention and seasoning of stones		
	39th	Introduction to bricks and tiles, Classification of bricks		
	40th	Constituents of good brick earth and harmful ingredients		
11th	**41st**	Manufacturing of bricks, testing of bricks, bricks prepared from fly ash	**11th**	Drawing of stairs
	42nd	Tiles: Terra-cotta, manufacturing of tiles, types and uses of terra-cotta		
	43rd	Introduction to lime, cement and mortars, classification & manufacturing of lime		
	44th	Artificial hydraulic lime, pozzolona, testing& storage of lime		
12th	**45th**	Composition of cement, types of cement, manufacturing of ordinary Portland cement	**12th**	Front and Side elevation
	46th	Testing of cement, special types of cement, storage of cement		
	47th	Definition, proportion of lime and cement mortar, Mortars for masonry and plastering		
	48th	Introduction to timbers		
13th	**49th**		**13th**	

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		Classification of timbers		**SESSIONAL-II EXAMINATION**
	50th	structure of timber		
	51st	Seasoning of timber, defects in timber		
	52nd			
14th	**53rd**	, fire proofing of timber, plywood and fibre boards	**14th**	Drawing of Cases, doors and windows and roofs
	54th	Masonite and its manufacturing, important indian timbers		
	55th	Introduction to paints and varnishes, basic constituents of paint, types of paint and painting of wood		
	56th	Constituents of varnishes, characteristics and types of varnishes		
15th		**PRE-UNIVERSITY EXAMINATION**	**15th**	**PRE-UNIVERSITY EXAMINATIONS**

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Text books & References:

1. Building Construction, Gurcharan Singh, Standard Pub., New Delhi. Building construction, B.C.
Punmia

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ASSIGNMENTS

Assignment – I

1. What do you mean by masonry work?

2. Explain type of masonry work?

3. Introduction about the green building concept and method?

4. Type of masonry bond in brick work?

5. What do you mean by mean by laying brick work?

6. Explain defects in the brick masonry?

7. Difference between stone and brick masonry?

8. Define glass block masonry.

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Assignment – II

1. What do you mean by cavity wall?

2. What do you mean by partition wall?

3. Advantage and dis advantage of cavity wall in construction?

4. Define location of partition wall & construction detail?

5. Explain construction of cavity wall masonry?

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Assignment – III

1. Define foundation. Explain various type of foundation and function.

2. What do you mean by sub surface investigation geophysical method?

3. Explain general feature of shallow foundation.

4. Explain deep foundation & type pile and pier.

5. Define damp proofing & water proofing.

6. Explain defect and cause of dampness.

7. Explain prevention of dampness and material used for dampness.

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Assignment – IV

1. Define roof & type of roofs. Explain.

2. Define trusses king post truss.

3. Explain various type of flooring.

4. Define basement.

5. Explain door and windows.

6. Explain location type, size & fixture of door & windows.

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Assignment – V

1. Method of damp proofing treatment in building.
2. Define sound insulation & fire protection.
3. Classification of sound insulation & fire protection.
4. Define measurement and transmission of sound.
5. How many Material of sound absorber give name.
6. Explain sound insulation of building.
7. Explain fire resisting properties of material.
8. Why are use requirement fire protection for building?

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Assignment – VI

1. Define brick & tile.

2. Classification of brick.

3. Explain constituent of good brick earth.

4. Method of testing of brick.

5. Define lime, cement & mortars.

6. Define cement and type of cement.

7. Method of testing of cement.

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Assignment – VII

1. What is mortar? Define it.

2. Explain proportion of lime and cement.

3. Distinguish between mortar for masonry & plastering.

4. Define timber? Classification of timber and defects in timber.

5. Explain method of fire proofing of timber.

6. Explain important Indian timber.

7. Define paint & type of paint of wood.

8. Define varnishes? Explain characteristic & type of varnishes.

9. Difference between paint & varnishes.