SEMESTER PLAN

Estimating and costing-1(26442)
4th Semester,Civil Wood Technology.
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Theory Class			
Week	**Topic**	**Description**
1	Lecture-1 Topic-(1.1-1.3)	1.1 Define estimating. 1.2 State the methods of estimating. 1.3 Mention the measurement rules and estimating methods.
	Lecture-2 Topic-(1.4-1.6)	1.4 Mention the rules of deduction for opening, bearing portion in masonry works. 1.5 List the unit weight of different materials used in construction works. 1.6 Mention the unit of different items of construction works as per standard practice.
2	Lecture-3 Topic-(2.1-2.3)	2.1 Mention the rules to find out the volume of earth work by mid area, mean area & prismoidal method. 2.2 Mention the comparison with computing volume by three methods. 2.3 Calculate the volume of earth work in excavation of a tank by mid area method.
	Lecture-4 Topic-(2.4-2.5)	2.4 Calculate the volume of earth work in excavation of a tank by mean area method. 2.5 Calculate the volume of earth work in excavation of a tank by prismoidal method.
3	Lecture-5 Topic-(3.1-3.4)	3.1 Mention the side slopes for different heights of road embankment. 3.2 Mention the cross section of road embankment. 3.3 State the method to find out the volume of earth work in embankment by mid area method, mean area method & prismoidal method. 3.4 State the process to find out the volume of earthwork partly cutting & partly filling of road.
	Lecture-6 Topic-(3.5-3.8)	3.5 Calculate the volume of earth work in embankment by mean area method. 3.6 Calculate the volume of earth work in embankment by mid area method. 3.7 Calculate the volume of earth work in embankment by prismoidal method. 3.8 Calculate the volume of earth work for a road partly cutting and partly filling.
4	Lecture-7	*Quiz test-1*
	Lecture-8 Topic-(4.1-4.4)	4.1 State the different types of canal cross section. 4.2 Mention the cross section of partly filling and partly cutting of a canal. 4.3 Explain the method to find out volume of earth work for partly cutting and partly filling. 4.4 Explain lead and lift.
5	Lecture-9 Topic-(5.1-5.3)	5.1 Describe different parts of a step. 5.2 Prepare an estimate the brick quantities of three steps according to standard measurement. 5.3 List different items of works in a boundary wall.
	Lecture-10	Class test-1

6	Lecture-11 Topic-(5.4-5.5)	5.4 Describe the estimating process for construction of 100m long Brick boundary wall and RCC boundary wall. 5.5 Prepare an estimate for construction of 100m long Brick boundary wall and RCC boundary wall.
	Lecture-12 Topic-(6.1-6.2)	6.1 Describe the different types of roads. 6.2 List different items of works in a bituminous road.
7	Lecture-13 Topic-(6.3-6.5)	6.3 List different items of works in a RCC road. 6.4 Describe the estimating process for construction of 100m long bituminous road and RCC road. 6.5 Prepare an estimate for construction of 100m long RCC road and bituminous road.
	Lecture-14	Revision class
8		Mid term
9	Lecture-15 Topic-(7.1-7.4)	7.1 Define sub-structure. 7.2 State center line and separate wall method. 7.3 Mention the advantage and disadvantage of center line and separate wall methods. 7.4 Describe the estimating process for the earth work in excavation of foundation trenches.
	Lecture-16 Topic-(7.5-7.7)	7.5 Describe the estimating process of the RCC work (1:2:4) from foundation to grade beam. 7.6 Prepare an estimate for the earth work in excavation of foundation trenches. 7.7 Prepare an estimate for the RCC work (1:2:4) from foundation to grade beam.
10	Lecture-17 Topic-(8.1-8.4)	8.1 Define super-structure. 8.2 Explain the methods of deduction for opening or over lapping. 8.3 Describe the estimating process of RCC work (1:2:4) for Isolated Column, lintel, beams, roof slab, stair, sunshade and drop wall. 8.4 Describe the estimating process of cement plaster to both sides of brick wall.
	Lecture-18 Topic-(8.5-8.7)	8.5 Describe the estimating process of grill work for windows. 8.6 Describe the estimating process of wood work in door and window frames. 8.7 Describe the estimating process of wood work in door and window shutters.
11	Lecture-19 Topic-(9.1-9.2)	9.1 State the meaning of rate analysis. 9.2 Mention the purposes of rate analysis.
	Lecture-20 Topic-(9.3-9.4)	9.3 Explain contractor's profit, overhead charges, contingency sundries and lump sum (LS). 9.4 Explain the unit rate of materials & labour.
12	Lecture-21	Class test-2
	Lecture-22 Topic-(9.5-9.6)	9.5 Mention the advantage of rate analysis to prepare cost estimate. 9.6 Mention the rates analysis for Brick flat soling & herring bone bond (10 sqm).
13	Lecture-23 Topic-(9.7-9.8)	9.7 Mention the rates analysis for 125 mm thick & 250 mm thick brick work (10cum). 9.8 State the rates analysis for 10 cum Cement concrete (1:3:6) work.
	Lecture-24 Topic-(9.9-9.10)	9.9 Mention the rates analysis for 10 cum R.C.C. works (1:2:4). 9.10 State the rates analysis for 10 sqm Plastering work with cement mortar (1:6).
	Lecture-25	Revision class (1.1-3.4)

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	Lecture-26	Quiz test-2
15	Lecture-27	Revision class (3.5-5.5)
	Lecture-28	Revision class (6.1-7.4)
16	Lecture-29	Revision class (7.5-8.4)
	Lecture-27	Revision class (8.5-9.10)

Practical:

1/ Calculate the quantity of cement, sand and brick required for 10 cum masonry work using (1:6) mortar.
1.1 Collect the necessary tools and equipment's.
1.2 Determine the quantities of cement, sand and bricks.
1.3 Maintain the record of performed task.

2/ Calculate the quantity of cement, sand and brick required for 10 sqm brick masonry work (125mm thick wall) with 1:4 mortar.
2.1 Collect the necessary tools and equipment's.
2.2 Determine the quantities of cement, sand and bricks.
2.3 Maintain the record of performed task.

3/ Calculate the quantity of cement, sand and brick chips required for 10 cum reinforced cement concrete (1:2:4) work.
3.1 Collect the necessary tools and equipment's.
3.2 Determine the quantities of cement, sand and bricks chips.
3.3 Maintain the record of performed task.

4/ Estimate for construction of a tank.
4.1 Collect the necessary tools and equipment's.
4.2 Perform earthwork excavation
4.3 Prepare brick flat soling
4.4 Determine the quantities of cement, sand and bricks
4.5 Construct CC and RCC casting
4.6 Maintain the record of performed task.

5/ Estimate for making wooden chair/ table/almirah.
5.1 Collect the necessary tools and equipment's.
5.2 Prepare or collect the drawing of a chair, table and almirah
5.3 Calculate the quantity of wood of chair, table and almirah.
5.4 Maintain the record of performed task.

6/ Calculate the quantity of a foundation detail of a frame structure building (Sub-structure).
6.1 Collect the details drawing of a foundation.
6.2 Calculate the quantity of earth work in excavation of foundation trenches.
6.3 Calculate the quantity of sand filling in plinth.
6.4 Calculate the quantity brick flat soling and mass concrete in foundation and floor.
6.5 Estimate the reinforced cement concrete work in foundation up to plinth level.
6.6 Calculate the quantity of brick work up to plinth level.
6.7 Cement plaster to plinth wall and skirting with neat cement finishing (NCF).
6.8 Maintain the record of performed task.

7/ Calculate the details quantity of a Super-structure item of a frame structure building.

7.1 Prepare or collect the details drawing of a frame structure building
(Super-structure)

7.2 Calculate the quantity of brick work in ground floor and above 125 mm wall).

7.3 Estimate the cement plaster work on brick wall (1:6) and RCC surfaces
(1:4).

7.4 Estimate the RCC work of ground floor and 1st floor.

7.5 Estimate the quantity of wood work in frame and shutters.

7.6 Estimate the wood, steel and aluminum work in window frames and
Shutters.

7.7 Estimate the grill works for window and verandah.

7.8 Estimate the patent stone flooring and tiles works.

7.9 Estimate the quantity of white wash, distemper and paints.

7.10 Estimate the painting of grills and varnishing works of doors.

7.11 Maintain the record of performed task.

8/ Calculate the cost per square meter for two storied residential building.

8.1 Prepare or collect the details drawing of two storied frame structure
Building.

8.2 Calculate details quantity of residential building.

8.3 Calculate the cost per square meter according to PWD standard.

8.4 Maintain the record of performed task.