Kurigram Polytechnic Institute,Kurigram.
Semester plan
Subject Name: Estimation & Quantity Surveying-1 (68852)
Tech: Construction 5th Semester.

No.of week	No.of Class	General Objective	Remarks
1	1 2 3	**1. Understand the basic concept of estimating.** **1.1 Define the term estimating.** **1.2 State the methods of estimating.** **1.3 Mention the rules and methods of measurements of works.**	
2	1 2 3	**1.4 Mention the rules of deduction for opening, bearing etc. in masonry.** **1.5 List unit weight of different materials used in construction works.** **1.6 Write unit of different items of works as per standard practice.**	
3	1 2 3	**2. Estimate the volume of earth work for road work for excavating a tank.** **2.1 Mention the rules of finding out the volume of earth work by mid area method.** **2.2 Mention the rules finding out the volume of earth work by mean area method.**	
4	1 2 3	**2.3 Mention the rules finding out the volume of earth work by primordial method.** **2.4 Calculate the volume of earth work in excavating pond of a given cross-section by mid area method, mean area method & prismoidal method.**	
5	1 2 3	**3. Estimate the volume of earth work for road embankment.** **3.1 Identify the side slopes for different heights of road embankment.** **3.2 Identify the cross section of road embankment.** **3.3 State the method of finding out the volume of earth work in embankment by mid area method.**	
6	1 2 3	**3.4 State the method of finding out the volume of earth work in embankment by mean area method.** **3.5 State the method of finding out the volume of earth work in embankment by Primordial method.** **3.6 Calculate the volume of earth work of 100m long embankment by mid area method, mean area method & prismoidal method.**	
7	1 2 3	**4. Estimate the volume of earth work for canal digging.** **4.1 Identify the cross section of partly banking and partly cutting.** **4.2 Explain the method of finding out volume of earth work for partly banking and partly cutting.**	
8	1 2 3	**4.3 Explain the terms lead and lift.** **4.4 Determine the rate of different categories of labour considering the work site including lead and lift.. .**	
9	Mid Term Exam		

10	1 2 3	**5. Estimate the different quantities of items of work in steps, boundary wall and roads.** **5.1 Identify different parts of steps.** **5.2 List different items of works in a boundary wall.** **5.3 List different items of works in a bituminous road.** **5.4 List different items of works in a RCC road.**	
11	1 2 3	**6. Understand the procedure of estimating a simple building.** **6.1 State center line and separate wall method.** **6.2 Mention the advantage and disadvantage of center line and separate wall methods.** **6.3 Explain the methods of deduction for opening or over lapping.** **6.4 Define the terms sub-structure and super-structure.** **6.5 Explain the dimensions length, breadth and height or depth of any section.** **6.6 Identify main wall, partition wall, outer wall, inner wall, parapet wall etc.** **6.7 Identify RCC work in lintel, beam, stair, floor/roof slab, sunshade, shelve, railing, drop wall etc.**	
12	1 2 3	**6.8 List different sizes of doors and windows.** **6.9 List the number of ventilators required.** **6.10 Identify the items of work for civil construction.** **6.11 Calculate the amount of cement, sand and brick, required for 10 cum masonry work using 1:4** **proportion of mortar.** **6.12 Calculate the amount of cement, sand and brick, required for 10 cum masonry work using 1:6** **proportion of mortar.** **6.13 Calculate the amount of cement, sand and brick, required for 10 sqm masonry (125mm thick wall)** **using 1:4 proportion of mortar.** **.**	
13	1 2 3	7. Understand the estimate of roof truss (wooden & steel). 7.1 State the purpose of roof truss. 7.2 State the way of calculating the quantities of wood required in a roof truss. 7.3 State the way of calculating the quantities of steel required in a roof truss. 7.4 Mention the standard lapping at end & sides of CI sheet for roofing. 7.5 State the way of calculating the quantities of CI sheet for roof covering. 7.6 State the way of calculating the quantities of GI ridding. 7.7 State the way of calculating the painting works of roof truss.	
15	1 2 3	**9. Understand the basic concept of rate analysis.** **9.1 State meaning of rate analysis.** **9.2 Explain the purposes of rate analysis.** **9.3 Explain the terms, contractors profit, overhead charges, contingency sundries and lumsum.** **9.4 Mention the advantage of rate analysis to prepare cost estimate.** **9.5 Calculate the analysis of rates for different items of building works.**	
16		Extra Class	

PRACTICAL:

1. Prepare an estimate for construction of underground water reservoir.
2. Prepare an estimate for construction of 100m long boundary wall.
3. Prepare an estimate for making wooden chair, table and almirah.
4. Prepare an estimate for construction of 100m long bituminous road.
5. Prepare an estimate for construction of 100m long RCC road.
6. Calculate the quantity of following works for two storied building with verandah.
    6.1 Earth work in excavation of foundation trenches.
    6.2 One layer brick flat soling in foundation a floor.
    6.3 Cement concrete work (1:3:6) in foundation a floor.
    6.4 Brick work (1:6) in foundation (Sub-structure) up to plinth level.
    6.5 Earth work in filling the sides of foundation trenches and plinth.
    6.6 Damp proof course (DPC) below super structure wall.
    6.7 Brick work (1:6) in super structure.
    6.8 125mm thick Brick work (1:4) in partition wall.
    6.9 RCC work (1:2:4) in lintel, beams, roof slab, stair, sunshade and drop wall.
    6.10 Mild steel bar reinforcement fabrication in different RCC works when percentage given.
    6.11 Wood work in door and window frames.
    6.12 Wood work in door and window shutters. Grill work for windows.
    6.13 Pre-cast RCC ventilator.
    6.14 Cement plaster to both sides of brick wall.
    6.15 Cement plaster to plinth wall and skirting with neat cement finishing (NCF).
    6.16 Patent stone flooring (PSF).
7. Prepare an estimate of a wooden truss with CI sheet roofing.
    7.1 Select a detail drawing of a king post roof truss.
    7.2 Determine the length & sizes of different members of the truss.
    7.3 Calculate the quantity of wood required for the truss in cum.
    7.4 Determine the measurements of roofing area of the truss.
    7.5 Calculate the quantity of CI sheet roofing in bundle / sqm.
    7.6 Calculate the quantity of GI ridging in m.
    7.7 Calculate the quantity of painting works of the truss.
8. Prepare an estimate of a steel truss with CI sheet roofing.
    8.1 Select a detail drawing of a steel truss.
    8.2 Identify the length sizes & thickness of different members of the truss.
    8.3 Determine the measurements of each of the member of the truss.
    8.4 Calculate the total quantity of steel required in kilogram/quintal/ton.
    8.5 Determine the measurements of roofing area of the truss.
    8.6 Calculate the quantity of CI sheet roofing in bund

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