

A- Course Summary:

1. Introduction to Construction Management
2. Introduction to Construction Contracts
3. Introduction to Project Risk Management
4. Introduction to Construction Time Management
5. Planning and Scheduling using Primavera V.6
6. Introduction to Construction Site Works
7. Introduction to Construction Quantity Survey
8. Introduction to Construction Cost Estimating
9. Introduction to Construction Cost Budgeting
10. Introduction to Construction Cost Control
11. Introduction to Procurement Management
12. Introduction to Project Management
13. Introduction to Business Development

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B- Course Details:

1- Construction Management Career-Case Study Requirements:

*** Construction Management Project:**

Students shall be divided into groups of 5's (each group shall act as a construction company which shall be named by the group). Each group will be given tender documents and will be asked to submit their offers (according to the details set in such tender documents). Tender documents shall be sold at a price of 100LE, the group who will win the tender will be rewarded a cash price (besides marking achievement) of 1000LE.

Offers should be submitted (in softcopy and hardcopy) on (or before) the date and time set in the tender documents, offers that arrives after the due submission will be disqualified from the competition and get a 10% deduction from their total project scores (per each day of delay). The offers shall be delivered in the manner and in the place agreed upon later.

Students shall be allowed to submit questions regarding the tender documents on the Facebook group – Construction Management Group – CAD MASTERS. The question should be posted in the form of a letter and they will be relied upon publically in the same manner. An optional pre-tender meeting may be conducted to discuss matters relating to the project. Groups are advised to attend such pre-tender meeting (although it is not mandatory).

Groups shall submit their offers as per the tender documents requirements; in two separate envelopes technical and financial (filled BOQ). All required documents/information (as set by the tender documents) must be submitted in accordance with the instructions provided. Any non-conforming offers will affect the technical grading of the project.

Only those groups who attain 60% of the obtainable scores in the evaluation of the technical proposal will have their financial proposal envelope opened. The financial proposals shall be opened and will receive a weighting of 40% while the technical evaluation will receive 60%. The Tenderer with the highest combined technical and financial scoring will win. The overall evaluation percentage shall be based on the following equation: Overall Percentage = (Technical Percentage) x 0.60 + (Financial Percentage) x 0.40. The evaluation criteria are indicated below.

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Technical envelopes shall be evaluated based on the following criteria:

Technical Evaluation Criteria	Percentage
Compliance with tender documents and its requirements.	15
Method Statement of each BOQ Item – this covers the method of construction (how each item will be executed), which the group proposes to utilize for the works execution. The method of statement shall state the resources to be used.	15
Time Programme - covers the schedule submitted and the relation between the activities and to what extent the durations of and the relations between the activities can be achieved in reality. This should also include a WBS	15
Prequalification and Experience - covers the pre-qualification and the previous experience of the Tenderer.	5
Contractor's resources for the works - covers the Tenderer's resources for manpower (OBS), equipment (equipment list), material and subcontractors (subcontractor list).	5
Compliance with extra requirements set below	45
Total	100%

Financial envelopes shall be evaluated as per the following basis: Percentage of lowest price shall be 100%. Percentage of the remaining prices shall be = lowest price x 100/price.

* Extra Requirements:

Besides the requirements mentioned above, students shall be required to present the following:

1. Contract Study: students shall analysis the contract thoroughly to identify any risks (that maybe generated from conditions/discrepancies/mistakes/etc.) that may be included in it. Students shall be allowed to submit a clarification/condition sheet containing the different conditions that they want to include/exclusion to/from the contract. Such document shall include the discount that will be given in case the clarification/condition was accepted (if any). Students will negotiation such conditions during the presentation of their project.
2. Quantity Surveying Report: showing how different (construction) quantities (of the BOQ items) were calculated.
3. Cost Estimation Report: showing how different unit prices (of each BOQ items) were calculated; this document shall show the quantity of each work item, resource to be used and their prices (labor, material, equipment, S/C), production rates, item execution duration, assumptions, etc. (any externally obtained information such as costs and productivity shall be referenced, it is also advised to include subcontractor's/supplier's information to verify costs). This report should also contain:

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- a) Indirect Cost (site overheads, general overheads, risk, profit) Estimation & Analysis
 - b) Cost Analysis Summary
 - c) Resource Histogram of 3 resources in the project
4. Cash Flow Analysis: showing the following:
 - a) Project Cash Flow (In/Out)
 - b) S-Curve
 - c) Step Diagram
5. Risk Study: this involves producing a risk register and calculating contingency. The risk study shall include risk identification, risk analysis (qualitative and quantitative) and the appropriate risk response and monitor and control strategy.
6. Students shall prepare a project presentation describing what they have performed in the project (who did what) and the lesson learned from the experience.

The above requirements shall be submitted in English with the technical envelope.



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2- Introduction to Business Development Course Content:

Introduction	مقدمة
Market analysis and targeting specific sector	تحليل سوق العمل و إستهداف قطاع للمشروعات
Typical tender process	طرق وأساليب المناقصات
Tender documents	مستندات العطاء
Types of bonds	انواع الضمانات
Bill of quantities BOQ in accordance with international standards	كيفية اعداد كراسة الكميات والفئات طبقا للنظم والمعايير الدولية
Work breakdown structure	نظام تقسيم المشروعات لحساب الوقت طبقا للنظم والمعايير الدولية
Cost Breakdown Structure	نظام تقسيم المشروعات لحساب التكلفة طبقا للنظم والمعايير الدولية
Methods of pricing	نظم التسعير المختلفة للمناقصات
Tenders evaluation	طرق تقييم العروض والمناقصات
Tender awarding and contacting procedures	ترسية المشروعات وإجراءات التعاقد

3- Introduction to Construction Contracts Claims Topics:

- A- Introduction to Construction Contracts (Legal Perspective)
- B- Introduction to Construction Contracts (Engineering Perspective)
- C- Introduction to Construction Claims

4- Introduction to Cost Management Course Content:

* Stages of Engineer Projects:

A. Feasibility Stage:

1. Technical Study
2. Marketing & Environmental Study
3. Legal Study
4. Cost Estimation
5. Approximate Estimate

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B. Design Stage:

1. Architectural Design & Structural Design
2. Details Drawings & Method Statement
3. Specifications & General Conditions & Particular Conditions
4. B.O.Q
5. Cost Estimation (Productivity & Production Rate)
6. Detailed Estimate
7. Time schedule

C. Tendering Stage:

1. Cost Estimation
2. Detailed Estimate
3. Cost Budgeting (Cash Flow Analysis)

D. Construction Stage:

1. Cost Control
2. Cost Forecasting

E. Commissioning Stage:

1. Defective liability Period
2. Retention
3. Taking Over Certificate
4. Performance Certificate

5- Introduction to Planning and Scheduling Course Content:

* Course Outcomes:

1. Develop Project WPS "Understand Project Scope of Work."
2. Create project activity List.
3. Make relations between activities.
4. Assign budget cost to all the activities.
5. Assign main key player resources for the activities.
6. Develop S-Curve for the project "Cash flow diagram."
7. Develop project different reports.
8. Update the project.
9. Monitor the project Progress and compare with the planned.
10. Know Primavera Tips and Tricks.

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* Course Content:

1. Planning Engineer Responsibilities
2. How to read and understand Primavera Time Schedule?
3. Planning definitions
4. How to Create Small Project on Primavera V.6?
5. How to Create Data Loading?
6. Excel Fundamentals for Planning Engineer
7. Project Information Documents
8. How to read Project B.O.Q?
9. Create Project Data Loading
10. **Workshop on Real Project:**
 - A. Create Project WBS on Primavera V.6
 - B. Import Activities from Excel to Primavera
 - C. Estimate Activity Durations
 - D. Estimate Manpower / Manpower Productivity Rates
 - E. Link Activities with Relationships in Primavera
 - F. Engineering Activities (Add Material Activities - Add Shop drawing activities)
 - G. Final schedule (Relations - Resources loaded - Cost Loaded)
 - H. Final schedule (Relations - Resources loaded - Cost Loaded)
 - I. Create Cash flow & S Curve
 - J. Create Manpower Histogram
 - K. Resource Leveling & Smoothing
11. How to review your time schedule 5 Monitoring and Controlling Concept
12. Update the schedule
13. Monitoring and controlling concepts
14. Project Templates and Reports
15. Projects KPI – Dashboards
16. How to create Revised Schedule using Primavera V.6
17. How to create recovery Schedule using Primavera V.6
18. How to Review & Evaluate time schedule
19. Quick Review
20. Attendees Evaluation

* Software:

1. Primavera V.6
2. Microsoft Excel

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6- Introduction to Procurement Course Content:

1. Overview of Procurement
2. Classification of Procurement
3. Procurement Tactics
4. Supplier Management
5. Stake Holders Definition and Management
6. Cycle of Procurement in Companies
7. Negotiation
8. Egyptian Market Norms
9. International Trade Norms
10. K.P.I.'s
11. Procurement Career

7- Introduction to Quantity Survey Course Content:

No.	Topic
1	Introduction to technical office works (responsibilities - qualification)
2	Types of quantity survey (engineering - actual)
3	Measuring quantities/Manual measuring/Software measuring(AUTOCAD+REVIT) for BOQ Items as:
	1.Excavation
	2.Replacement
	3.Backfilling
	4.Concrete works (PC - RC-Steel Reinforcement)
	5.Insulation works
	6.Masonry works
	7.Carpentry works
	8.Plastering
	9.Painting
	10.Flooring
4	Brief on invoices & how to prepare it?
5	brief on BOQ & how to prepare it ?
6	Case study :- Application on Real project (BOQ - Qs-Invoices)

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