Engineering Training Center
Ain Shams University / Faculty of Engineering

Engineering Training Programs

Part 2

Engineering Training Cente
Ain Shams University / Faculty of Engineering

Architecture Programs

Architecture Programs

Computer applications in architecture
Architecture visualization
Photoshop

COURSE OBJECTIVES:

It aims to teach the principles of computer applications in architecture in the areas of architectural presentation and preparation of executive drawings Coordination through computer programs between architectural, electromechanical and structural drawings.

COURSE CONTENTS:

- Module One: Introduction to the types of rendering programs and an overview of Photoshop for rendering
    1. Principles of working with images
    2. Introduction to Photoshop
    3. How to import from AutoCAD
- Module Two: Practical exercise chalet visualization
    1. render projections
    2. Work on the file and separate its elements into layers
    3. adjustment stage
    4. Furnishing
    5. Façade rendering
- Module three : Practical exercise for viualizing and drawing a residential villa
    1. render projections
    2. Work on the file and separate its elements into layers
    3. adjustment stage
    4. Furnishing
    5. Projections rendering
- Module four : Practical exercise for viualizing and drawing a residential villa
    1. Perspective definition
    2. Interior perspective visualization
    3. Exterior perspective visualization
    4. New tools to modify and build on perspectives

TARGET PARTICIPANTS:

LOCATION:

DURATION: 8 hours

DATE:

Architecture Programs

Computer applications in architecture

Architecture visualization

3DS MAX

COURSE OBJECTIVES:

It aims to teach the principles of computer applications in architecture in the areas of architectural presentation and preparation of executive drawings Coordination through computer programs between architectural, electromechanical and structural drawings.

COURSE CONTENTS:

- Module one: Introduction to the program to understand the program interface and the work of architectural models
    1. Introduction to the 3ds max program
    2. How to import from AutoCAD
    3. Building blocks and architectural elements
- Module Two: Study of an external project for the facade of a villa
    1. How to build models for the facade of a villa.
- Module Three: Study of an interior design project
    1. How to build interior scene models and how to import blocks from different libraries.
- Module four: the study of the vray
    1. Study of V-ray materials
    2. modify the properties of materials
    3. Study the characteristics of lighting in the interior space
    4. illuminate the exterior scenes
    5. Simplified study of Rendering techniques

TARGET PARTICIPANTS:

LOCATION:

DURATION: 16 hours

DATE:

Architecture Programs

Computer applications in architecture
BIM

COURSE OBJECTIVES:

It aims to teach the principles of computer applications in architecture in the areas of architectural presentation and preparation of executive drawings Coordination through computer programs between architectural, electromechanical and structural drawings.

COURSE CONTENTS:

- Module one: introduction
  1. Introduction to the basic concept
  2. Introduction to the interface and functionality of Revit
  3. Navigational engineering modeling
  4. Add gridlines and elevations
  5. Drawing walls
  6. Add doors and windows
- Module 2: Creating Architectural Modeling
  1. create a floor
  2. Ceating a stair
  3. Creating a hole
  4. Creating ceiling
  5. Add furniture components
- Module Three: Modeling Output Annotations and tags
  1. Marking and tagging
  2. Dimensions
  3. room card
  4. Make a schedule for doors and windows
  5. Create accommodation schedule
- Module 4: Evaluation of CIDB BIM
  1. Modeller Review check up

TARGET PARTICIPANTS:

LOCATION:

DURATION: 21 hours

DATE:

COURSE OBJECTIVES:

Through this program, the student can become a professional in interior design by studying to understand the elements Interior design and how to deal with colors, materials and finishes to make the interior space more comfortable for the user.

COURSE CONTENTS:

- Module One: Principles of Interior Design
    1. good design elements
    2. professional display boards
    3. How to write a short design report
    4. Interior design history
    5. How to design
    6. preliminary sketches of the design to communicate with the client
- Module Two: The Role of Colors in Interior Design
    1. Create your own color wheel
    2. Understanding primary, secondary and tertiary colors
    3. Explore tints, tones and shades
    4. Display panels for historical and contemporary color schemes
    5. The psychological significance of color in the interior space
- Module Three: Getting to know the wall finishes
    1. Learn about the characteristics of wall and floor finishes
    2. Planned design to combine these finishes
    3. Create a display board and select the appropriate samples
    4. Explain the use of responsible products within your scheme
- Module Four: Principles of designing furniture and accessories schemes
    1. Understand styles of furniture and accessories
    2. Choosing the right fabrics and linings for soft furnishing schemes
    3. Fabric Quantity Calculation
    4. Correct way to install blinds
    5. Soft furnishing layout design for client's brief
    6. Create a visual presentation of your chosen design

- Module Five: The Role of Lighting in Interior Design

    1. Understand different lighting products and manufacturers Task, ambient and decor lighting
    2. Lighting levels for room designs
    3. Cool and warm lighting
    4. Create a lighting scheme for furniture layout
    5. Apply appropriate codes for industrial lighting schemes
    6. Develop a lighting plan to meet the client brief

- Module 6: How to draw the initial working engineering drawings

    1. Organizing the interior by drawing horizontal projections at an appropriate drawing scale
    2. Drawing internal sectors showing the internal interfaces of the space at an appropriate drawing scale
    3. Flooring drawing showing the design of the interior floors of the void at an appropriate drawing scale
    4. Ceiling drawing showing the design of ceilings for the interior space at an appropriate drawing scale

TARGET PARTICIPANTS:

LOCATION:

DURATION: 30 hours

DATE:

Environmental design and sustainable architecture

COURSE OBJECTIVES:

The goal is for the trainee to be familiar with the general concepts of sustainable architecture and environmental design standards, and to be familiar with the international assessment system (LEED) and the (GREEN GYRAMID) system, and that this course is the appropriate choice for those who want to prepare for the (LEED) exam.

COURSE CONTENTS:

- Module One: Sustainability
    1. Introduction to sustainability.
    2. definitions.
    3. Triple bottom line.
- Module Two: Green Buildings Sustainability and the built environment.
    1. green buildings.
    2. traditional building design process versus entire building design process.
    3. The cost of green buildings.
    4. Green Building Rating Systems and LEED.
    5. Frequently asked questions about green buildings.
- Module Three: LEED
    1. Explore the LEED rating system.
    2. LEED project adaptations.
    3. LEED accreditation process.
    4. Minimum program requirements.
    5. Basic requirements and credits.
    6. Integrative process and LEED.
- Module 4 LEED GA Exam green building market
    1. LEED accreditation test .
    2. About the LEED Green Associate Exam
    3. Eligibility, registration and scheduling Strategies ،
    4. tips and roadmap
    5. common questions

Environmental design and sustainable architecture

- Module Five: The Green Pyramid Evaluation System
    1. Introduction and overview green hierarchical classification
    2. system Classification Categories
    3. sustainable location, accessibility, environment
    4. Energy Efficiency
    5. Water Efficiency
    6. Materials and Resources
    7. Environmental Quality
    8. Management
    9. innovation and added value procedural matters
    10. Green Pyramid Approval Procedure
    11. Forms for use in the approval process

TARGET PARTICIPANTS:

LOCATION:

DURATION: 30 hours

DATE:

Architecture Programs

Project management
Value engineering & its role in the project success.

COURSE OBJECTIVES:

The goal is for the trainee to be able to apply value engineering in the workplace to increase the reliability and availability of assets In accordance with global standards, reduce unscheduled downtime and production interruptions, reduce maintenance costs by 50 - 70%, learn the global performance measurement standard.

COURSE CONTENTS:

- Module 1: Introduction to value engineering .
    1. value engineering goals
    2. When is value engineering applied?
    3. The effect of value engineering
    4. Introduction to project scope budget analysis
    5. Project budget components
- Module Two: Categories and their types
    1. Value Technologies
    2. Total value management concept
    3. VE Phase Relationships - Value Management in Design
    4. Value Categories
    5. Value types
    6. When is value engineering applied?
- Module Three: Job Evaluation
    1. Primary and secondary functions
    2. FAST Job Analysis Systems
- Module 4: VE . Six-Step Action Plan
    1. Information
    2. speculation
    3. Planning
    4. Implementation of Report
    5. Execution

TARGET PARTICIPANTS:

LOCATION:

DURATION: 25 hours

DATE:

Architecture Programs

Project management

Fundamentals of project management

COURSE OBJECTIVES:

Objective To provide the trainee with a comprehensive foundation in project management principles and techniques, including project life cycle, leasing, stakeholder management, work/task breakdown, network diagram and critical path, contingency planning, resource allocation, project control, and reporting.

COURSE CONTENTS:

- Project life cycle
- project constraint model.
- Project start/rent.
- Project communications.
- Project planning.
- Project work breakdown structure.
- Project network diagram.
- Project cost and schedule management.
- Close the project.

TARGET PARTICIPANTS:

LOCATION:

DURATION: 30 hours

DATE:

Architecture Programs

Project management

studying types of contracts (FIDIC)

COURSE OBJECTIVES:

Objective Upon successful completion of the FIDIC Contracts course, participants will be able to: Gain a better understanding of the contractual terms stipulated in FIDIC contracts Improving the skills of drafting contractual agreements (especially in amending special conditions) Understand the different types of FIDIC contracts and be able to choose the right FIDIC contract for projects Gain an understanding of entitlements in the event of any disputes arising within the project Effective application of contractual provisions in dealing with changes, claims and payments and ability to notify the Engineer as per contractual requirements Interpretation and comparison of contractual provisions between standard forms of contracts and detailed contracts Understand the importance of insurance requirements, bonds and guarantees on the project

COURSE CONTENTS:

- Module 1: Introduction to FIDIC
    1. What is a contract?
    2. Standard Contract Forms vs. Detailed Contracts
    3. What is FIDIC?
    4. Various types and suitable choice of FIDIC models
    5. FIDIC Clauses Overview
- Module 2: General Provisions and Obligations of the Parties
    1. Definition and interpretation
    2. Document priority
    3. Duties of the employer
    4. Contractor's duties
    5. Engineer duties
- Module 3: Main Contractual Provisions
    1. start and finish
    2. program
    3. Request for an extension
    4. complete delay damages
    5. suspension of works
- Module 4: Main Contractual Provisions
    1. Measurement and calendar
    2. Differences and adaptation Advance and interim payments
    3. Final Payments
    4. Certificates

Project management
studying types of contracts (FIDIC)

- Module 5: Key Contractual Provisions
    1. grab the works
    2. Disadvantages of liability
    3. End frustration force majeure
- Module 6: Main Contractual Provisions
    1. compensation Risks
    2. Limitation of Liability insurances
    3. Bonds and guarantees
- Module 7: Key Contractual Provisions
    1. Nomination of subcontractors
    2. Provisions for payments to designated subcontractors
    3. staff and work
    4. Factory, material and workmanship
    5. Tests
- Module 8: Claims, Dispute and Arbitration
    1. Claims management
    2. Arbitration Board in the dispute
    3. DAB .
    4. Procedures and Decisions friendly settlement control
- Module 9: Special Terms and Annexes
    1. Specific Application
    2. Terms Bonds and guarantees
    3. Bid letter Bid supplement
    4. make a deal

TARGET PARTICIPANTS:

LOCATION:

DURATION: 30 hours

DATE:

Architecture Programs

Project management
Preparing the bidding documents for the project

COURSE OBJECTIVES:

The goal is to enrich the participants' knowledge and support their applied skills in preparing and managing tenders. Develop participants' skills in contract management. Familiarize participants with the latest means of preparing tenders and managing contracts through practical exercises and exercises, and presenting real experiences and expertise.

COURSE CONTENTS:

- Types of management contracts and their differentiation
- criteria Preparing for tenders
- Offering Documents, Advertising and Invitation
- Terms and Conditions Books
- Regulations Tender submission rules
- Insurances / warranties / guarantees
- Tender committees and their formation rules
- Examination, analysis and evaluation of offers
- Exclusion and award
- Penalty for breach

TARGET PARTICIPANTS:

LOCATION:

DURATION: 15 hours

DATE:

Architecture Programs

Project management
Project risk management

COURSE OBJECTIVES:

Objective To enrich participants' knowledge of risk management in the project context and highlights the importance of managing risk Risks and the need for future project managers to think in this regard. Contains the theory and concepts of risk management Basic as they apply to project environments including project risk planning, preparation and response. Also take a look General on the areas of risk identification, assessment, control and control. Qualitative and quantitative risk analysis techniques will be introduced to participate in this program.

COURSE CONTENTS:

- Introduction to risk management
- Create and plan risk management
- hazard identification
- Roles and Responsibilities
- Qualitative risk analysis and assessment
- Response to risks, treatment and action planning for
- Monitoring, reviewing and controlling risks
- Quantitative risk analysis and assessment
- Reporting, Communication and Counseling
- Decision making based on risk
- group offers Review
- Evaluation of Training Course
- Preparation

TARGET PARTICIPANTS:

LOCATION:

DURATION: 24 hours

DATE:

Architecture Programs

Implementation supervision stages
Implementation management of the project's phases.

COURSE OBJECTIVES:

Objective The program deals with the basic information that the participant needs in the implementation of building and construction projects from management systems The implementation phase of these projects includes planning, organizing, directing and controlling, and the resulting systems of procedures for completion The project is on time and within its budget and with the prescribed quality according to the best engineering methods.

COURSE CONTENTS:

- quality management
- Implementation
- planning and programming
- Supervising the work of the site
- On-site administrative procedures
- Engineering procedures in the construction
- process the quality
- Contract management
- Safety and security at project sites
- Receipt of the site and liquidation of the contract

TARGET PARTICIPANTS:

LOCATION:

DURATION: 20 hours

DATE:

Architecture Programs

Implementation supervision stages
Stages of execution of finishes for regular architectural works

COURSE OBJECTIVES:

The goal of the program is to develop the participant's knowledge of the details of the implementation phase of the regular works and to identify the materials, construction and finishing, whether it is for internal and external finishing works, and after training on this program, he will be able to identify the foundations of the correct implementation of any architectural implementation work.

COURSE CONTENTS:

- Get to know the project and create a timeline
- Building works
- Oyster work preparatory stage
- Electrical work construction phase
- plumbing work
- Carpentry
- Tile, porcelain and ceramic works "Floors"
- Suspended ceiling works
- Wood flooring works
- External paint work
- Interior paint work
- Artificial stone works
- Interlock works
- The works of the pagodas

TARGET PARTICIPANTS:

LOCATION:

DURATION: 24 hours

DATE:

Architecture Programs

Building maintenance and operation management program.

COURSE OBJECTIVES:

The goal is to enrich the participants' knowledge in the field of maintenance and operation management in buildings, and the trainee will be able to Explain the importance of building services systems for the high performance of any property Classify 14 types of building service systems found in buildings Find out why different maintenance tasks need different skill sets and need to be performed on different frequencies Identification of the critical and general building services elements that need maintenance.

COURSE CONTENTS:

- The changing context in any building
- maintenance
- operations after maintenance
- maintenance organizations
- Design/Maintenance Relationship
- The nature of maintenance
- work information management
- maintenance planning
- maintenance contracts
- Carry out building maintenance work

TARGET PARTICIPANTS:

LOCATION:

DURATION: 24 hours

DATE: