



*Faculty of Engineering
& Built Environment*

EXECUTIVE CERTIFICATE IN BUILDING & CONSTRUCTION

**SIGN UP &
RECEIVE**

- Starter Pack (T-shirt, ID & Lanyard)
- Orientation Session
- Training & Certificate
- Accommodation at MAHSA University
- Apprenticeship



Module 1: Engineering Drawing (Week 1-3)

Overview This module introduces fundamentals of producing two dimensional (2-D) working drawings and detailed specifications using the standard format. It comprises introduction to architectural plans, graphical application drawings, detail drawings and building services plan. For effective delivery of the module, the students are put through interactive lectures, tutorials and studio sessions. The students will be able to apply their knowledge and skills to translate sketched information into detailed scale drawings for a small residential building.

Objective

1. Sketch detail information into architecture drawings using manual skills
2. Produce a complete set of working drawings and detailed specifications of a small residential building using standard format for tender document
3. Present the basic technical drawings and plans using CAD software

Topic Outline

Topic 1: Introduction to Architectural plans
Topic 2: Graphical Application Drawings
Topic 3: Graphical Application Drawings
Topic 4: Detail Drawings
Topic 5: Building Services Plan
Topic 6: Introducing the Basics of CAD Software
Practical including Studio Drawing and AutoCAD



Module 2 : Construction Material and Technology (Week 4-6)

Overview This module exposes the students to the science and materials in Civil Engineering construction. The module includes the characteristics, properties and use of construction materials, theory and experimentation on structural behavior in construction components. The students will be taught using interactive lectures, tutorials and laboratory tests. At the end of this module, the students will be able to analyse the structural behaviour of construction materials by performing laboratory tests.

Objective

1. Apply basic principles in construction, structural, environmental and services operations by determining the comfort levels in the design and use of buildings.
2. Select appropriate materials based upon the characteristics and properties.
3. Perform the laboratory tests for compliance with specifications and properties of material.

Topic Outline

Topic 1: Basic Principles Construction, Structural, Environmental and Services Operations
Topic 2: The Characteristics, Properties and Use of Construction Materials
Topic 3: The Characteristics, Properties and Use of Construction Materials (Cont.)
Topic 4: Structural Behaviour on Construction Components
Topic 5: Introducing the Basics of CAD Software
Topic 6: Experimentation on structural behaviour in construction components
Topic 7: Experimentation on structural behaviour in construction components (Cont.)
Practical including construction material testing at Civil Eng. Lab and site visit



Module 3: Building System Services (Week 7-9)

Overview This module explores the practical aspects of building services planning, installation and familiarization with all the building facilities, definitions of the various system used. It is comprising ventilation and air-conditioning, space heating, distribution services, disposal system, lights. escalator and general services and plumbing. For effective delivery of module, the students are put through interactive lecture, tutorials and visits to the selected building sites. The students will be able to utilize selected building sites their understanding on the principle applicants of building.

Objective

1. Describe the principles and applications of building services systems at design and installation stages.
2. Produces a work that shows the relationship between building services systems and components towards design and installation considerations.

Topic Outline

Topic 1: Space heating
Topic 2: Ventilation and air conditioning
Topic 3: Distribution services
Topic 4: Disposal system
Topic 5: Disposal system (Cont.)
Topic 6: Lifts, escalators and general services
Topic 7: Plumbing

Practical including Building inspection involve with MAHSA Academy



Course 4: Site Surveying Procedure (Week 10-12)

Overview This module introduces the principles of surveying and enables the students to utilize their skills in order to execute surveying fieldwork using appropriate equipment in construction site. It contains processing of the surveying data using CAD software, identification and utilization of survey instruments that are encountered on site. For effective delivery of the module, the students are put through interactive lectures, tutorials and practicals. At the end of the module the students will be able to utilize appropriate instruments and conduct the specific survey fieldwork on site.

Objective

1. Explain principles of site surveying in relation to error, accuracy and precision.
2. Construct the characteristics and operations of surveying instruments by applying surveying knowledge and software application.
3. Prepare a group work to calculate areas and volumes, levelling, traversing, coordinates and setting out of buildings and curves.

Topic Outline

Topic 1: Introduction to Surveying
Topic 2: Introduction to Surveying (Cont.)
Topic 3: Horizontal Control
Topic 4: Vertical Control
Topic 5: Calculation of Areas and Volumes
Topic 6: Setting Out
Topic 7: Circular Curves

Practical including Site Survey field work

