

BUILDING INFORMATION MODELING (BIM)

Training Program Guide

Architecture, Structure, MEP, Sustainable
and Management.



Engineering Science Institute

ESI for Training & Development provide a high quality training in engineering fields via qualified instructors, with all its specializations.

ESI works under the supervision of the Technical and Vocational Training Corporation (TVTC) & the Saudi Council of engineers (SCE). Esi has internationally accredited from Autodesk, PMI, AACE & VUE.

Benefits of AUTODESK Training and Certification

- Communicate with impact using integrated 3D rendering tools
- Gain mastery of Autodesk applications.
- Graduate with sought-after expertise.
- Demonstrate your knowledge and skill to employers.
- Add a valuable credential to your resume.
- Separate yourself from the comp



WHY BIM

What is BIM?

Building Information Modeling (BIM) is an intelligent 3D model-based process that equips architecture, engineering, and construction professionals with the insight and tools to more efficiently plan, design, construct, and manage buildings and infrastructure.

BIM benefits your business

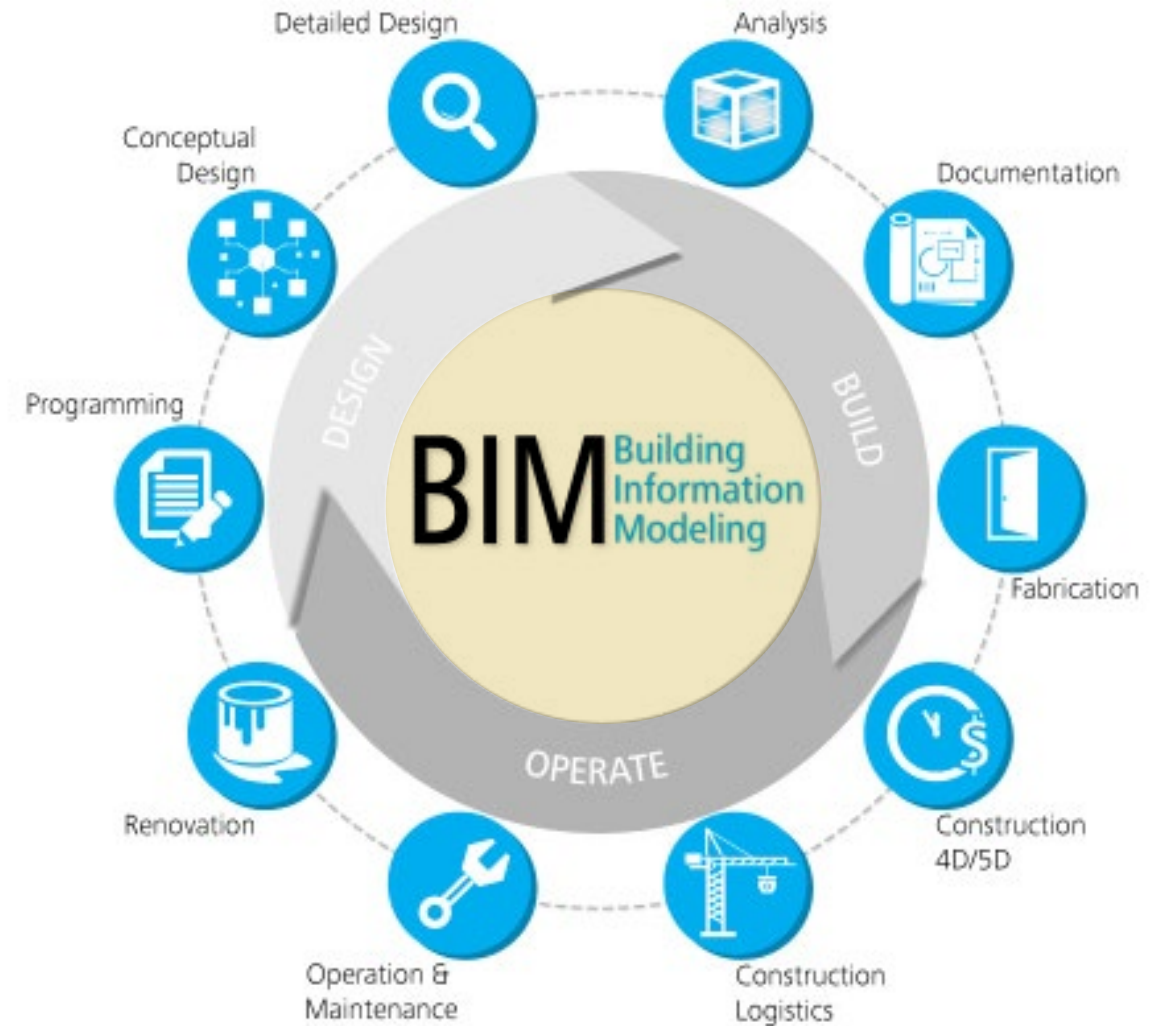
Building Information Modeling (BIM) processes have helped countless firms in diverse industries operate more productively, produce higher-quality work, attract more talent, and win new business. With a rising number of government and commercial organizations mandating BIM, now is the time to consider implementing BIM at your firm.

Global BIM policies

Governments worldwide are mandating or recommending BIM, recognizing its value for helping to deliver projects successfully. Find out which BIM policies are affecting your industry, projects or bids.

This list is indicative of the Government BIM programs around the world, and is not intended to be an exhaustive list.

China	Germany
Hong Kong	France
Japan	New Zealand
Netherlands	Singapore
Norway	United Kingdom
South Korea	Spain
Dubai	United States
European Union	Finland



BIM Curriculum

Coverd in the Training

The BIM curriculum is designed to provide students with the skills and technical knowledge requested by employers using Building Information Modeling (BIM) software. The curriculum program focuses on the development of fundamental BIM skills and problem-solving strategies. Please see the Course Descriptions for further information on class content.

Course Code	Course Name	No. of Hours
BIM 101	Introduction to Revit	25 hr
BIM 102	Revit Intermediate	25 hr
BIM 103	Dynamo Studio	20 hr
BIM 104	Green Stuido	20 hr
BIM 105	3Ds Max Vray	25 hr
BIM 106	Lumion	20 hr
BIM 201	Revit Structure 1	25 hr
BIM 202	Revit Structure 2	25 hr
BIM 203	Dynamo Studio	20 hr
BIM 301	Revit MEP 1	25 hr
BIM 302	Revit MEP 2	20 hr
BIM 401	Navisworks 1	20 hr
BIM 402	Navisworks 2	20 hr
BIM 501	BIM Quantity Survey	16 hr
BIM 502	BIM Facility Managment	16hr
BIM 503	Coordination Skills	16 hr
BIM 601	BIM Construction Managment 1	20 hr
BIM 602	BIM Construction Managment 2	20 hr

BIM Modeler

BIM 101
BIM 102

BIM Architect

BIM 101
BIM 102
BIM 103
BIM 104

BIM Civil-Eng.

BIM 101
BIM 201
BIM 202
BIM 203

BIM MEP-Eng.

BIM 101
BIM 301
BIM 302

Multimedia Designer

BIM 101
BIM 102
BIM 105
BIM 106

BIM Project Planner

BIM 101
BIM 102
BIM 401
BIM 402

BIM -QS

BIM 101
BIM 501

BIM Facility Manager

BIM 101
BIM 201
BIM 301
BIM 401
BIM 501

BIM Coordinator

BIM 101
BIM 201
BIM 301
BIM 401
BIM 104
BIM 501
BIM 502
BIM 503
+
2 Course Elective

BIM Project Manager

BIM 101
BIM 201
BIM 301
BIM 401
BIM 601
BIM 104
BIM 501
BIM 502
BIM 503
BIM 602

ARCHITECTURAL BIM COURSES

For:

Architecture Designer
BIM Architect
LEED Architect
Computational Designer
Visual Designer



BIM Diploma for Architecture

Courses Description

BIM 101

Introductin to Revit

This unit presents many of the fundamental concepts of creating BIM models through the application of the tools in Revit Architecture. The features presented are a small subset of the full range available in the Autodesk® Revit platform, specifically focusing on creating new models and displaying them in ways suitable for various applications.

BIM 102

Revit Intermediate

This introductory course examines how Revit users design 3D models that simultaneously document the project in schedules and 2D architectural drawings. Modifying elements, and presenting the model. By the conclusion of the course, students will gain valuable knowledge building a Revit Architecture (BIM) project fro scratch and presenting multiple views of the model on an architectural sheet.

BIM 103

Dynamo for Visual Programming

Dynamo will enable us to work within a Visual Programming process wherein we connect elements together to define the relationships and the sequences of actions that compose custom algorithms. We can use our algorithms for a wide array of applications- from processing data to generating geometry- all in realtime and without writing a lick of code.

BIM 104

BIM for Sustainable Design

This course explores computer modeling, using Green Building Studio, providing students the skills to learn how Sustainable Design and BIM technologies work together to optimize energy efficiency during the building design process. Students will learn to integrate the building design practice of computer modeling sustiable design incorporating energy efficiency using Green Building Studio.

BIM 105

3Ds MAX Vray

3dsMax – Rendering will focus on rendering 3D models and will also develop the modeling skills learned in DAC 201. The student will learn material mapping and lighting to generate realistic renderings. In addition we will explore creating custom building materials, develop global illumination, radiosity and other lighting techniques

BIM 106

Lumion

Lumion will focus on animating 3D models. In the process, students will apply the modeling and rendering skills learned earlier in the course sequence to create realistic walk-throughs and fly-bys of 3D models which can be used to present architectural, interior design and urban planning models. The technical aspects of animation will be addressed including key framing and inverse kinematics.



STRUCTURAL BIM COURSES

For:

Structure Engineer
Site Engineer
Electrical Engineer
Mechanical Engineer

BIM Diploma for Structure & MEP

Courses Description

BIM 201

Revit Structure 1

The course participant will use Revit Structure to design and develop the appropriate BIM 3D models and develop the Structural Engineering-based construction documents. In this class, architectural Revit models are provided for the class to develop the structural model and CDs, as would occur in practice.

BIM 202

Revit Structure 2

The course continues where Revit Structure 1 left off, expanding on lessons learned to develop the appropriate BIM 3D models and develop the Structural Engineering-based construction documents. In this class, architectural Revit models are provided for the class to develop the structural model and CDs, as would occur in practice.

BIM 301

Revit MEP 1

This course is designed for engineers looking to explore the more advanced methods of documenting a building's Mechanical, Electrical and Plumbing (MEP) systems using Revit MEP. The class is designed to teach how Revit MEP is used to integrate MEP systems into the building envelope and also how the successful implementation of Revit MEP will facilitate collision detection within Navisworks.

BIM 302

Revit MEP 2

This class enhances the lessons learned in Revit MEP 1 – where the class focuses professional applications using Revit MEP software for either (specifically) Mechanical, Electrical or Plumbing applications. In this class, a number of Revit models are provided with the architectural and structural models already in-progress.

BIM 203

Dynamo for Visual Programming

Dynamo will enable us to work within a Visual Programming process wherein we connect elements together to define the relationships and the sequences of actions that compose custom algorithms. We can use our algorithms for a wide array of applications- from processing data to generating geometry - all in realtime and without writing a lick of code.



**Coordination and Managment BIM
COURSES**
For:

BIM Coordinator
Site Coordinator
BIM Facility Manager
BIM Project Planner
BIM Project Manager

BIM Diploma for Coordination & Managment
Courses Description

BIM 401
Naviswroks 1

This course for professional designers, architects, engineers, contractors and others seeking professional advancement and job transition through acquiring 3D and 4D modeling review skills. By the conclusion of this class, participants will be able to use Navisworks tools to: effectively run object-in-interference checks on 3D models from multiple disciplines, create 4D simulations, interactive animations.

BIM 402
Naviswroks 2

Navisworks 2, “Best Practices,” is a follow-on course 1, participants will be able to use Navisworks tools to: create database links, scripts, improved 4D scheduling and improved renderings and 4D construction animations.

BIM 501
BIM Quantity Survy

This course participants will be able to understand the model-based quantity take-off process in 3D modelling and how it comprises trade-based standards of measurement rules in BIM to improve productivity through model-based quantity take-off compared to traditional methods and accelerate cost estimation and decision making on resources planning.

BIM 502
BIM Facility Managment

In this course the engineers explore how the powerful tools available in the BIM platform can be used to track, update, and maintain facilities management information to support better planning, operations, and maintenance decision-making throughout a building’s lifecycle

BIM 503
BIM Coordination Skills

This course participants will learn the best approaches to combine 3D geometry from cross disciplines into one scene to enable effective model reviews. Through new technology like Autodesk BIM 360™ gives project teams the tools to coordinate better, communicate more effectively, and resolve issues quickly, resulting in faster and more efficient project delivery.

BIM 601 - 602
BIM Construction Managment 1,2

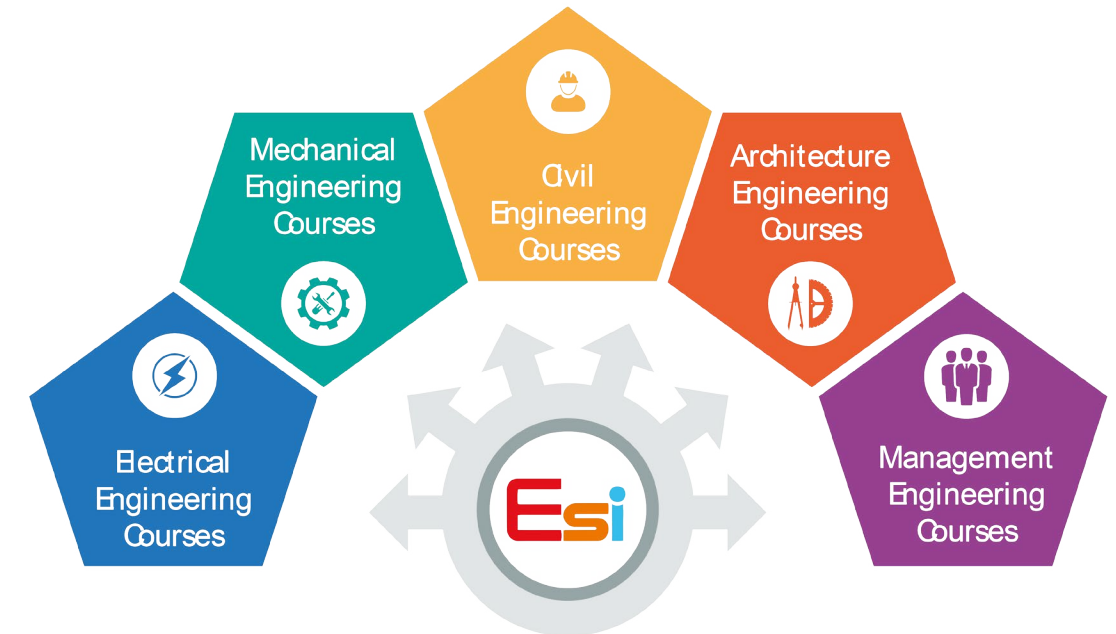
These two courses Participants, will be able to understand, theoretically how to manage BIM process, technology and people during construction projects from early stage of design until operation stage. That covers issues related to Contracts, Level of Development (LOD) and BIM implementation strategies within organization. These two courses are accredited by a well-known organization in United Kingdom

Why train with ESI?

Great businesses need great people



Which course is right for me?





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Toll Free No. : 92000 9474
Phone : +966 112490080

E-mail: info@esi.edu.sa
Web : www.esi.edu.sa