

Requisition Letter

From,

Head of the Department,
Civil Engineering,
J.K.K Munirajah College of Technology,
T.N.Palayam.

To,

The Principal,
J.K.K Munirajah college of Technology,
T.N.Palayam.

Respected Sir,

Sub: Seeking permission for conducting a Certificate Program-Reg

We have planned to conduct a certificate Program **VIRTUAL PROTOTYPING WITH**

BIM for II-, III- and IV-year CIVIL students **07.08.2023 TO 12.08.2023** by program coordinator

Ms. A.CAYALVIZHI Architect. So, I request you to kindly provide permission to conduct the certificate Program.

Thanking You,

Place: T.N.Palayam

Date: 03.08.2023

Permitted
[Signature]
03/08/23

Yours Truly,

[Signature]

[Signature]
PRINCIPAL
JKK MUNIRAJAH COLLEGE
OF TECHNOLOGY
T.N. PALAYAM (Po)-638 506.
GOBI (Tk), ERODE (Dt).



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JKKMCT/CIRCULAR/AUGUST/2023

03.08.2023

CIRCULAR

The Department of Civil Engineering is planning to organize a Certificate Program on
" **VIRTUAL PROTOTYPING WITH BIM**" (36 Hours) for the benefit of the students from
" **07.08.2023 (MONDAY) TO 12.08.2023 (SATURDAY)**" Students those who are willing to
attend the Program can enroll their names to their class in-charges respectively on or before
05.08.2023.



Copy To,

All the HODs and Staff Members, The
Student's circulation,
Notice boards and File copy


31/8/23
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Program Name : VIRTUAL PROTOTYPING WITH BIM

Program Code : 23CEVPBCP01

Program Coordinator Name : Ms. A.CAYALVIZHI Architect

Total Hours : 36 hrs

Course Description:

This course introduces Building Information Modeling (BIM) as a transformative process in civil engineering, enabling students to develop skills in digital construction modeling, collaboration, and project management. Emphasis will be placed on hands-on learning, case studies, and industry-relevant software.

UNIT I Course Objectives:

- ❖ Understand the fundamental concepts and importance of BIM in civil engineering projects.
- ❖ Develop proficiency in BIM tools for design, analysis, and project coordination.
- ❖ Enhance collaborative skills through interdisciplinary project work.
- ❖ Integrate BIM workflows to improve efficiency and sustainability in construction.

UNIT II Learning Outcomes:

Upon completion of this course, students will be able to:

- ❖ Demonstrate knowledge of BIM principles and technologies.
- ❖ Create and manage 3D models using BIM software.
- ❖ Perform clash detection and model coordination.
- ❖ Interpret and apply BIM standards and protocols.
- ❖ Produce detailed construction documentation from BIM models.

UNIT III Course Structure:

Module 1: Introduction to BIM (6 Hours)

- ❖ Definition, History, and Evolution of BIM
- ❖ BIM in the Civil Engineering Lifecycle
- ❖ Benefits and Challenges of BIM Implementation

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Module 2: BIM Software and Tools (8 Hours)

- ❖ Overview of Industry-Standard BIM Software (Autodesk Revit, Navisworks, Civil 3D)
- ❖ Hands-on Training in Revit: Basic Modeling Techniques
- ❖ Civil 3D for Infrastructure Projects

UNIT IV Modeling and Analysis

Module 3: BIM for Structural and Infrastructure Projects (6 Hours)

- ❖ Structural Modeling and Analysis
- ❖ BIM Applications in Roadways, Bridges, and Drainage Design
- ❖ Parametric Design and Automation

Module 4: Collaboration and Coordination (6 Hours)

- ❖ Multi-disciplinary Collaboration
- ❖ Clash Detection and Conflict Resolution (Navisworks)
- ❖ Document Management and Project Coordination

UNIT V Level of Development (LOD) Specifications

Module 5: BIM Standards and Protocols (4 Hours)

- ❖ International and Local BIM Standards (ISO 19650, PAS 1192)
- ❖ BIM Execution Plans (BEP)
- ❖ Level of Development (LOD) Specifications

Module 6: Case Studies and Capstone Project (6 Hours)

- ❖ Real-world BIM Case Studies
- ❖ Group Capstone Project: Develop a BIM Model for a Civil Engineering

Prepared By :

Name : *Ar. A. Gayathri*

Designation : *Senior Architect / Murali Architects.*

Ar. A. Gayathri
COURSE COORDINATOR

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CERTIFICATE PROGRAM – VIRTUAL PROTOTYPING WITH BIM

Schedule Period : 07.08.2023 TO 12.08.2023

Dates/ Duration	09:30 AM to 11:30 AM (02.00 hr)		11.45 AM to 1.15 PM (01.30 hr)		2:00 PM to 4.20 PM (02.30hr)
07.08.2023	This course introduces Building Information Modeling (BIM) as a transformative process in civil engineering, enabling students to develop skills in digital construction modeling, collaboration,	BREAK	Understand the fundamental concepts and importance of BIM in civil engineering projects.	LUNCH	Integrate BIM workflows to improve efficiency and sustainability in construction.
08.08.2023	Create and manage 3D models using BIM software.		Produce detailed construction documentation from BIM models.		Demonstrate knowledge of BIM principles and technologies.
09.08.2023	Definition, History, and Evolution of BIM		BIM in the Civil Engineering Lifecycle		Benefits and Challenges of BIM Implementation

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10.08.2023	Hands-on Training in Revit: Basic Modeling Techniques		Civil 3D for Infrastructure Projects		Structural Modeling and Analysis
11.08.2023	Parametric Design and Automation		Clash Detection and Conflict Resolution (Navisworks)		Document Management and Project Coordination
12.08.2023	International and Local BIM Standards (ISO 19650, PAS 1192)		Level of Development (LOD) Specifications		Real-world BIM Case Studies

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Resource Person Profile

Title of the Program	VIRTUAL PROTOTYPING WITH BIM
Duration and Timing of the Program	07.08.2023 TO 12.08.2023
Name of the Resource Person	Ms. A. CAYALVIZHI Architect
Photo Image of the Resource Person	
E-mail	<u>Cayaldhanam@gmail.com</u>
Mobile No:	9597170447
Designation	Senior Architect
Official Address	Murali architects, Adyar, Chennai
Educational Qualification	B. ARCH
Experience	3 years of Teaching Experience as Assistant Professor
Field of Interest	Architect


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CERTIFICATE PROGRAM – VIRTUAL PROTOTYPING WITH BIM

STUDENT WILLING LIST

S.NO	REGISTER NUMBER	STUDENT NAME	STUDENT SIGNATURE
1	731220103001	DIVAKAR R	
2	731221103301	SUSITHRA S	
3	731222103001	ANANDHAN B	
4	731222103301	MADHESHWARAN S	

COURSE CO-ORDINATOR

HOD

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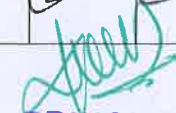
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CERTIFICATE PROGRAM - VIRTUAL PROTOTYPING WITH BIM

Schedule Period : 07.08.2023 TO 12.08.2023

S.N O	NAME OF THE PARTICIPANT	ATTENDANCE OF THE PARTICIPANTS											
		07-08-2023		08-08-2023		09-08-2023		10-08-2023		11-08-2023		12-08-2023	
		FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	FN	AN
IV YEAR													
1	DIVAKAR R	/	/	/	/	/	a	/	/	/	/	/	/
III YEAR													
2	SUSITHRA S	/	/	/	/	/	/	/	/	/	/	/	/
II YEAR													
3	ANANDHAN B	/	/	/	/	/	/	/	/	/	/	/	/
4	MADHESHWARAN S	/	a	/	/	/	/	/	/	/	/	/	/
Total Number Of Present		4	3	4	4	4	3	4	4	4	4	4	4
Total Number Of Absent		Nil	1	Nil	Nil	Nil	1	Nil	Nil	Nil	Nil	Nil	Nil
Signature Of Program Coordinator													
Signature Of Hod													


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ASSESSMENT ON VIRTUAL PROTOTYPING WITH BIM

ANSWER ALL QUESTIONS (20*1= 20 MARKS)

1: Introduction to BIM1. What does BIM stand for?

- A) Building Information Modeling
- B) Building Interior Management
- C) Blueprint Integration Method
- D) Basic Infrastructure Model

2. Which of the following is a primary benefit of BIM?

- A) Increased manual drafting
- B) Better collaboration and visualization
- C) Higher project costs
- D) Reduced digital workflows

3. When did BIM start gaining popularity in the construction industry?

- A) 1950s
- B) 1970s
- C) 1990s
- D) 2010s

4. Which phase is BIM NOT directly involved in?

- A) Design
- B) Construction
- C) Facility Management
- D) Marketing Campaigns

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Module 2: BIM Software and Tools

5. Which software is primarily used for BIM modeling?

- A) Photoshop
- B) Revit
- C) AutoCAD
- D) Excel

6. What is Navisworks primarily used for?

- A) Structural Analysis
- B) Clash Detection and Coordination
- C) Rendering
- D) Landscape Design

7. Which BIM software is specialized for civil infrastructure projects?

- A) Civil 3D
- B) SketchUp
- C) 3ds Max
- D) Blender

8. In Revit, what is the primary purpose of 'Families'?

- A) Grouping team members
- B) Predefined building components
- C) Drawing management
- D) Rendering views

Module 3: BIM for Structural and Infrastructure Projects

9. Parametric design in BIM allows for:

- A) Fixed dimensions and manual adjustments

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- B) Dynamic adjustments based on design changes
- C) Hand-drawn blueprints
- D) Basic text-based planning

10. Which of the following is a key application of BIM in infrastructure projects?

- A) Designing clothing patterns
- B) Roadways and Bridges
- C) Film Animation
- D) Website Development

11. Structural modeling in BIM typically involves:

- A) Creating artistic sketches
- B) Analyzing building load and stability
- C) Marketing strategies
- D) Developing websites

Module 4: Collaboration and Coordination

12. Clash detection helps in identifying:

- A) Color variations in design
- B) Conflicts between different building systems
- C) Marketing inconsistencies
- D) Unnecessary staff members

13. What is the main purpose of project coordination in BIM?

- A) Individual work on isolated tasks
- B) Seamless integration of multiple disciplines
- C) Reducing the number of drawings
- D) Limiting communication

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Module 5: BIM Standards and Protocols

14. Which international standard is commonly associated with BIM?

- A) ISO 19650
- B) ISO 9001
- C) ASTM E84
- D) LEED

15. The Level of Development (LOD) in BIM refers to:

- A) Project timelines
- B) Degree of detail and accuracy in models
- C) Number of team members
- D) Total project cost

16. A BIM Execution Plan (BEP) is created to:

- A) Define project goals and workflows
- B) Manage financial transactions
- C) Design furniture layouts
- D) Organize staff holidays

Module 6: Case Studies and Capstone Project

17. Which of the following is an essential part of a BIM capstone project?

- A) Developing a basic spreadsheet
- B) Creating a comprehensive BIM model
- C) Writing fictional stories
- D) Producing musical compositions

18. Peer review in BIM projects helps to:

- A) Increase project costs

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B) Identify errors and improve design quality

C) Limit collaboration

D) Enhance marketing strategies

19. A real-world BIM case study typically demonstrates:

A) Financial investments

B) Successful implementation of BIM in a project

C) Social media marketing

D) Sports analytics

20. What is a key outcome of a group capstone project in BIM?

A) Enhanced team collaboration and presentation skills

B) Individual work without feedback

C) Isolated design work

D) Minimal project documentation

COURSE CO-ORDINATOR

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STUDENT MARK LIST

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3	731222103001	ANANDHAN B	90
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SUMMARY/ OUTCOME REPORT

Name of the Certificate Program: **VIRTUAL PROTOTYPING WITH BIM**

Program Code : 22CEVPBCP01

Name of the Program Coordinator: Ms.A. CAYALVIZHI ARCHITECT

I hereby affirm that the entire Program contents in the Certificate Program "**VIRTUAL PROTOTYPING WITH BIM**" listed in the Add on Program Syllabus have been actually Learned by the students as the part of the prescribed co-curricular activities through Add on Program by NAAC and NBA.

I confirmed that the Certificate Program title as **VIRTUAL PROTOTYPING WITH BIM** Bench was done by me in the beginning of this semester and Program delivery with attendance of the students were recorded.

I confirmed that all registered students for this Certificate Program were actively attended and learned well throughout the duration of this Program. And all students were successfully completed and eligible to receive the participation certificate.

Outcome: Students shall be able to gain the knowledge in

- **VIRTUAL PROTOTYPING WITH BIM** has certainly offered a consistent and coordinated model-based approach to construct a building as per the design ideas.
- students can access information from the building design database at any point in time and keep a tab on the documentation process related to the construction of the building structure as per the designs One of the key learning outcomes that you after taking **the VIRTUAL PROTOTYPING WITH BIM**
- course is that you learn how to scan the Steel models for any type of collisions or any signs of collisions in the building even before its construction

Name: *As. A. Cayalvizhi*

Designation: *Senior Architect / murali architects.*

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