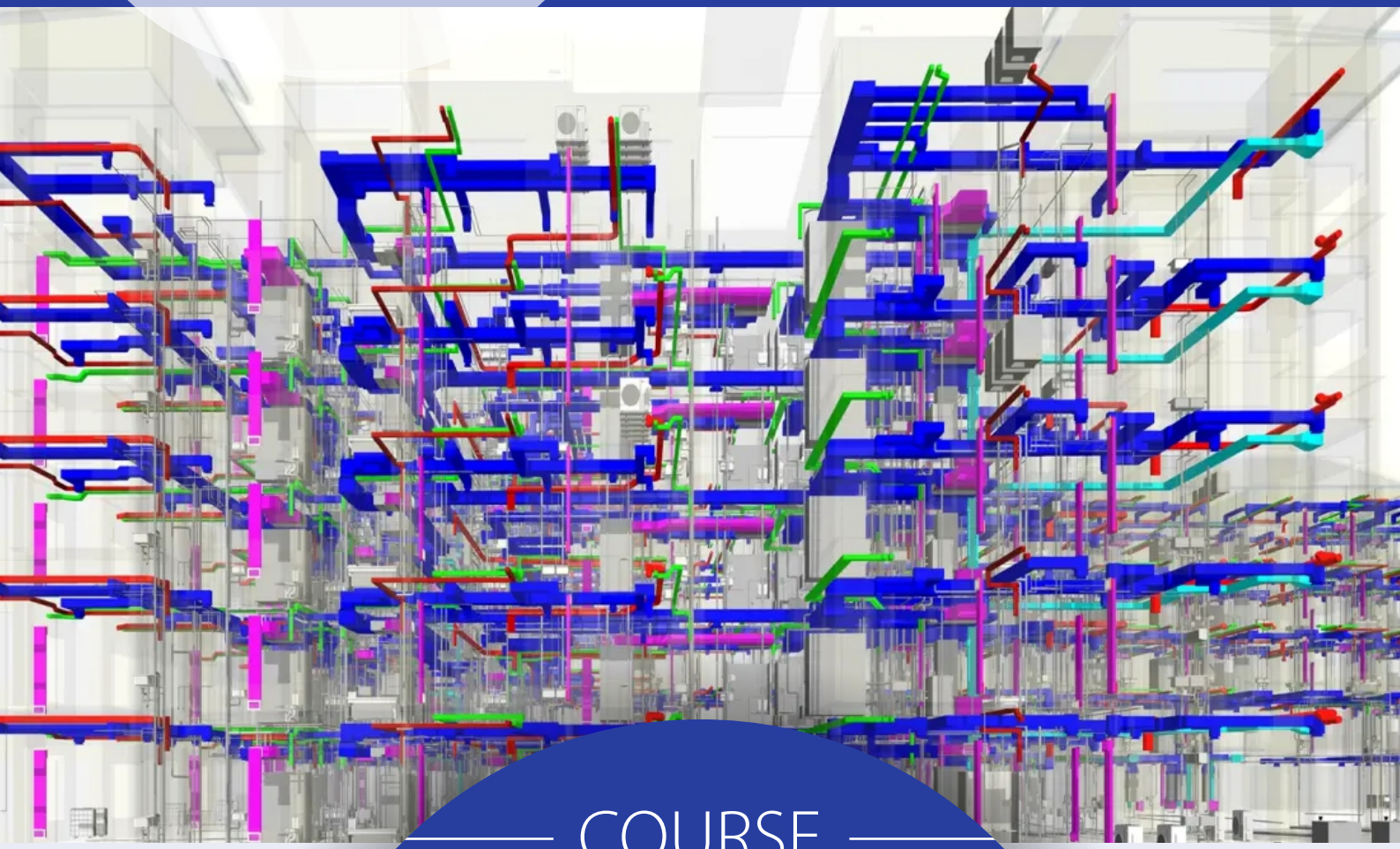
SHARDA UNIVERSITY
Beyond Boundaries

NAAC A+ ACCREDITED

SHARDA SCHOOL OF ENGINEERING & SCIENCES



COURSE

INTEGRATED BUILDING DESIGN AND MANAGEMENT USING REVIT (NV62011)

VALUE ADDED
COURSE BROCHURE-30 HRS
2025-26

ABOUT THE UNIVERSITY

Sharda University is a leading Educational institution based out of Greater Noida, Delhi NCR. A venture of the renowned Sharda Group of Institutions (SGI), The University has established itself as a high quality education provider with prime focus on holistic learning and imbibing competitive abilities in students.

ABOUT SCHOOL

Sharda School of Engineering & Science (SSES) is an open platform for diverse voices where teaching runs parallel to the real world and students are groomed to join the global workforce. SSES is distinguished as one of the top-ranked engineering schools in India. The students at SSES benefit through the professional grooming of renowned faculty and industry experts having experience of tackling pressing engineering problems. Students discover their passion in one of the various offered Engineering majors at the Sharda School of Engineering & Science.

A student-centric pedagogy, project-based approach and design-driven curriculum provide students with an inclination for complex problem solving, design, innovation, and a passion for learning.

The mission of the Sharda School of Engineering & Science through its various programmes are to educate well-integrated individuals who possess technical and social competence to succeed in professional arenas and design solutions for global problems.

ABOUT DEPARTMENT

Department of Civil Engineering (CE) is one of the premier departments of School of Engineering and Technology, Sharda University. The department offers B.Tech, M.Tech and Ph.D. Programmes. The department has people of eminence from academia as well as industry, who have exposure to future cutting – edge research programs in the field of Hydraulics, Environmental Engineering, Geotechnical Engineering, Structural Engineering, Transportation Engineering, Geodesy & Mapping, Geographic Information System & Remote Sensing and Global Positioning Systems.

ABOUT COURSE

INTEGRATED BUILDING DESIGN AND MANAGEMENT USING REVIT

This course aims to equip students with the skills to use Autodesk REVIT for Building Information Modelling (BIM), focusing on the creation, analysis, and management of building projects through a 3D parametric model.

Course Schedule

Week	Topic	Duration
1.	Overview of BIM concepts, advantages, and workflows in the construction industry.	3
2.	Introduction to Autodesk REVIT: Interface, tools, and features for BIM.	3
3.	Setting up a project: Levels, grids, and templates.	3
4.	Creation of architectural components: Walls, doors, windows, and floors.	3
5.	Modeling structural elements: Columns, beams, slabs, and foundations.	3
6.	Developing a complete 3D parametric model of a building.	3
7.	Generating 2D drawings and sheets from the REVIT model.	3
8.	Creating schedules: Material take-offs, quantity schedules, and cost estimation.	3
9.	Annotating and detailing construction drawings for submission.	3
10.	Viewing and navigating the BIM model: Section views, 3D views, and walkthroughs.	3
11.	Phasing and design options for construction planning.	3
12.	Integrating REVIT with external analysis tools for structural and energy simulation.	3

RESOURCE PERSON

Faculty Name: Dr. Tushar Bansal
Department: Department of Civil Engineering, SSES Sharda University

Dr. Tushar Bansal is presently working as an assistant professor at Sharda University, prior to this, he worked as an assistant professor at Skyline Institute of Engineering and Technology, India. He completed his PhD. in Civil Engineering from Bennett University. He published various research papers in peer reviewed journals and conferences. He published 7 patents in which two patents was granted. He is a technical member of RILEM and involved in various Tcs.

School: SSES **Programme: M.Tech** **Branch: CE**	**Batch : 2025-27** **Current Academic Year: 2025-26** **Semester : II**

1. Course Code	NV62011
2. Course Title	Integrated Building Design and Management Using REVIT
3. Credits	_
4. Contact Hours	30 Hours
Course Type	Value added course
5. Course Objective	This course aims to equip students with the skills to use Autodesk REVIT for Building Information Modelling (BIM), focusing on the creation, analysis, and management of building projects through a 3D parametric model.
6. Course Outcomes	After the completion of the course students will be able to: CO1: Understand the fundamentals of Autodesk REVIT and its application to BIM workflows. CO2: Create 3D parametric models for architectural and structural components of buildings. CO3: Analyze and interpret BIM models for information retrieval, design optimization, and visualization. CO4: Generate construction documentation, including drawings and schedules, directly from the BIM model. CO5: Perform quantity take-offs and estimation from REVIT models. CO6: Use REVIT tools to manage multidisciplinary workflows and enhance project collaboration.
7. Course Description	This course focuses on using Autodesk REVIT for BIM workflows, including 3D modeling, construction documentation, quantity estimation, and collaboration.

8. Outline syllabus		CO Mapping
Unit 1	**Introduction to BIM and Autodesk REVIT**	CO1,CO6
A	Overview of BIM concepts, advantages, and workflows in the construction industry.	
B	Introduction to Autodesk REVIT: Interface, tools, and features for BIM.	
C	Setting up a project: Levels, grids, and templates.	
Unit 2	**3D Modeling in REVIT**	CO2,CO6
A	Creation of architectural components: Walls, doors, windows, and floors.	
B	Modeling structural elements: Columns, beams, slabs, and foundations.	
C	Developing a complete 3D parametric model of a building.	
Unit 3	**Construction Documentation**	CO3,CO6
A	Generating 2D drawings and sheets from the REVIT model.	
B	Creating schedules: Material take-offs, quantity schedules, and cost estimation.	
C	Annotating and detailing construction drawings for submission.	
Unit 4	**BIM Analysis and Visualization**	CO4,CO6
A	Viewing and navigating the BIM model: Section views, 3D views, and walkthroughs.	
B	Interdisciplinary coordination and clash detection within REVIT.	
C	Visualization and rendering for design presentations.	
Unit 5	**Advanced REVIT Features for Project Management**	CO5,CO6
A	Phasing and design options for construction planning.	
B	Collaboration tools: Linking and importing files, work-sharing, and managing revisions.	
C	Integrating REVIT with external analysis tools for structural and energy simulation.	
Mode of Examination	QUIZ/ASSIGNMENT/VIVA/PROJECT	