NOVATR

Master Computational Design Course

for Real-World Application

Break into an advanced career by learning to design efficient built environments with computational tools. A creative specialisation for architects and engineers.

Learn from experts working at

BIG · H&deM · Heatherwick studio · BURO HAPPOLD · Henning Larsen

UNS UNSTUDIO · Gensler · BENOY · EXTERNAL REFERENCE · POPULOUS

www.novatr.com

COURSE HIGHLIGHTS

Master 6+ software and 15+ plugins used in the industry in just 8 months.

Learn from the best

An international panel of computational design specialists from top-tier AEC firms serves as your mentors.

Tech-focussed education

With real-world projects and immersive content, you'll master the tech skills that the real-world demands.

Build a specialisation

Opt to specialise in High Performance Building Analysis or Computational BIM and unlock several high-paying career roles.

Guaranteed career guidance

Prepare for success with guided mock interviews, portfolio building, and LinkedIn optimisation

MASTER COMPUTATIONAL DESIGN COURSE

NOVATR

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MASTER COMPUTATIONAL DESIGN COURSE

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COURSE OVERVIEW

Become a Computational Design Specialist and accelerate your career in the AEC industry.

Involving data-driven processes like automation, Computational Design allows architects and engineers to work more efficiently, accurately, and creatively.

This 8-month course helps you launch into a successful career as a Computational Design Specialist, no matter how little experience you currently have. Our flexible curriculum features an engaging mix of weekly live sessions, mentor interactions, an elective specialisation, and capstone project.

You will learn alongside a vibrant, international community to become proficient in all essential tools and workflows.

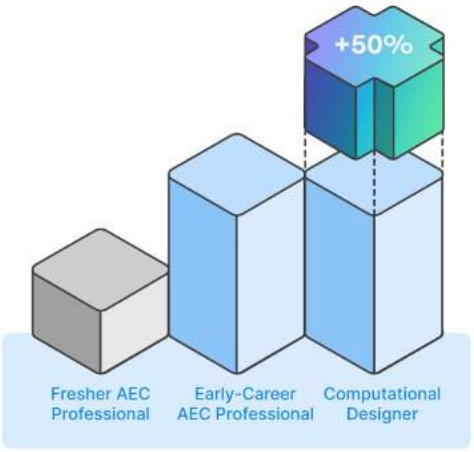
Tailored to fit your busy life, this course lets you learn flexibly. By the end of 8 months, you will have gained a computational design certificate, an impressive portfolio, and access to new job opportunities.

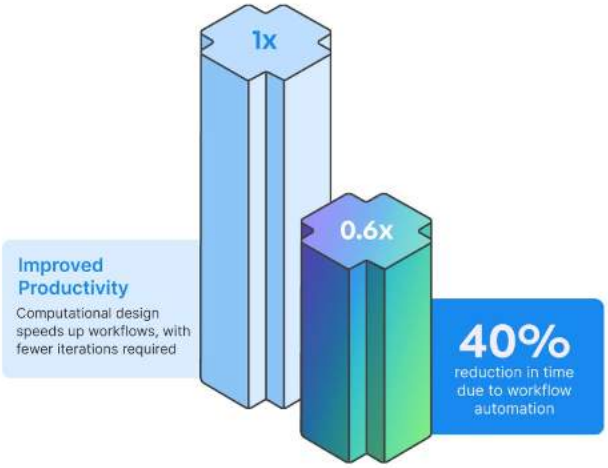
ABOUT COMPUTATIONAL DESIGN

Who is a Computational Designer?

A computational designer uses data-driven processes like automation, parametric modelling, and generative design to create complex geometric forms and optimise design workflows.

Why learn Computational Design?





Earn 50% more than the industry average

Computational designers enjoy excellent career prospects as well as a competitive advantage in the job market.

Unlock your creativity and improve productivity

Computational processes let you breeze through iterations so you can solve real-world design problems using automation.

Click here to chat with us

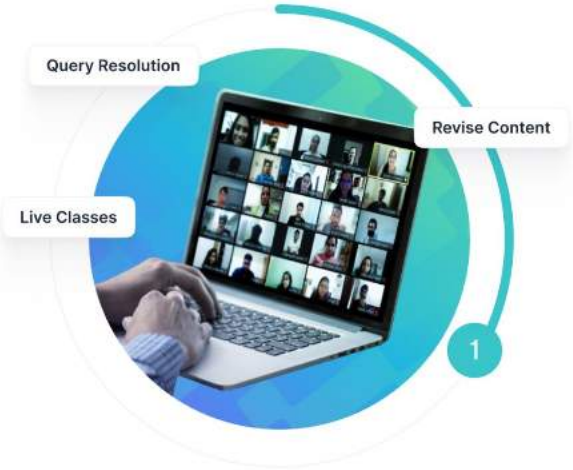
Call us at +91 9810558923

HOW YOU LEARN

Get ahead by doing

01. Learn

- Attend weekly live sessions with expert mentors.
- Reinforce your learnings with assignments and activities.
- Get quick query resolution and personalised feedback.



02. Specialise

- Choose and build on a specialisation of your choice.
- Work on a live, immersive capstone project.
- Map your skill development with detailed reports and feedback.

03. Achieve

- Prepare yourself for placements once you graduate.
- Sit for mock interviews and optimise your portfolio and LinkedIn.
- Connect with our network of hiring partners for job opportunities.

As featured in

Archinect

"With the course being offered at one-tenth the price of typical Masters courses, there's hardly a more accessible way to join the digital revolution."

CURRICULUM

Course Structure and Schedule

Live classes are held twice a week on **Wednesday at 9 pm and Saturday (or, at times, Sunday) at 7:30 PM IST.** In addition, recorded content is made available throughout the week for self-paced learning.

Learners are expected to put in a **minimum of 8–10 hours of effort per week** to fully grasp and apply the concepts taught in the course.

Theory Studio: **Computational Design Thinking** • 2 Weeks

A series of lectures contextualizing the computational and algorithmic approaches to design in general, with specific examples in architecture, product design, industrial design, and mixed media.

Foundational Studio: **Computational Modelling** • 9 Weeks

A beginner-friendly studio covering visual scripting and parametric modelling in Rhino 3D and Grasshopper with an emphasis on data management.

Core Studio: **Computational Geometries** • 8 Weeks

An advanced studio focussing on specific application of parametric modelling for AEC and industry-relevant workflows.

Select Specialisation

High Performance Building Analysis • 12 Weeks

This studio looks into the study of solar, thermal, wind and luminous behaviour of built environments through an integrated design workflow that allows for real-time performance analysis.

Portfolio and Capstone • 2 Weeks

Computational BIM Workflow • 12 Weeks

This studio looks into industry-specific knowledge of BIM and computational design technologies and their application through interoperability, data management and automation.

Portfolio and Capstone • 2 Weeks

SPECIALISATIONS

A world of opportunities awaits you

Build a specialisation of your choice, unlock new job roles, and join the league of the world's top 1% architects and engineers.

High Performance Building Analysis

Career Levels Unlocked:

- Building Sustainability Consultant
- Building Performance Analyst
- Sustainability Analyst

In this specialisation, you'll learn to evaluate and optimise energy efficiency, indoor environmental quality, solar and other performance characteristics of a building through an integrated performative design workflow.

Computational BIM Workflow

Career Levels Unlocked:

- Computational Design Specialist
- Design Technology Specialist
- BIM Specialist

This Studio looks into industry-specific knowledge of BIM and computational design technologies and their application through interoperability, data management and automation.

CURRICULUM

A learning journey that unlocks advanced career roles for you.

M00. Onboarding to the Novatr platform

• 1 Week | 0 Activities

WEEK 00-01

Onboarding to Novatr platform

Before the course kicks off, get acquainted with the platform, your course mentors and peers. Learn all about how your learning journey will unfold over the next couple of months.

M01. Computational Design Thinking

• 1 Week | 0 Activities

WEEK 01-02

Computational Design Thinking

Understand the computational and algorithmic approaches to design in general and in the fields of architecture, and industrial design through an engaging lecture series.

M02. Basic Modelling in Rhino 3D

• 2 Weeks | 4 Activities

WEEK 02-04

Basic Modelling in Rhino 3D

Learn the basics of organic and fluidic modelling in Rhino. Get acquainted with the interface, geometry types, quick modelling tips, essential commands, visualisations and more.

M03. Introduction to Grasshopper

• 3 Weeks | 6 Activities

WEEK 04-07

Introduction to Grasshopper

Learn the fundamentals of visual programming and dive head first into your first Grasshopper definition.

M04. Data Structures

• 2 Weeks | 4 Activities

WEEK 07-09

Data Structures

Learn to work with complex data structures, including advanced operations and modification operators.

M05. Parametric Forms

• 2 Weeks | 2 Activities

WEEK 09-11

Parametric Forms

Hone your visual programming skills by recreating famous parametric pavilions in great detail using grasshopper. Learn to use grasshopper for documenting projects and generating fabrication geometries.

M06. Rhino for Professional Practice

• 1.5 Weeks | 3 Activities

WEEK 11-12

Rhino for Professional Practice

Get acquainted with advanced architectural modelling in Rhino including essential tips for accurate modelling, layering conventions, model management, visualisation and professional processes.

M07. Facade Design & Geometry Rationalisation

• 1.5 Weeks | 3 Activities

WEEK 12-14

Facade Design & Geometry Rationalisation

Learn to panelise building facades, second skin and rationalise facade geometries.

M08. Form Finding - Application in Architecture

• 1.5 Weeks | 3 Activities

WEEK 14-15

Form Finding - Application in Architecture

Explore the application of Kangaroo Physics Engine to generate novel architectural geometries.

M09. Generative Design Optimisation

• 1.5 Weeks | 3 Activities

WEEK 15-17

Generative Design Optimisation

Learn the generative approach to design exploration and goal-oriented optimisation using Evolutionary Solver.

M10. Elective Module (Choose One)

• 2 Weeks | 4 Activities

WEEK 17-19

Stadium Design

Learn concept and parametric modelling approach for Stadium Design.

(OR)

WEEK 17-19

Introduction to GhPython

Get started with text-based scripting using GHPython component in Grasshopper.

M11. Pick your specialisation

• 1 Week | 0 Activities

WEEK 19-20

Introduction to Studio Specialisation

This session will give you a brief introduction to both specialisations. This will allow you to make an informed decision about choosing your specialisation based on your interests and aptitude.

WEEK 20-32

High Performance Building Analysis

This studio looks into the study of solar, thermal, wind and luminous behaviour of built environments through an integrated design workflow that allows for real-time performance analysis.

(OR)

WEEK 20-32

Computational BIM Workflow

This studio looks into industry-specific knowledge of BIM and computational design technologies and their application through interoperability, data management and automation.

M12-17A. **High Performance Building Analysis**

• 12 Weeks | 24 Activities

WEEK 20-22 • 2 Weeks

M12A. **Climate & Comfort Principles**

- Understanding climatic zone and Reading Standard Weather Data
- Basics of Thermal Comfort
- Universal Thermal Climate Index
- Psychometric Charts and Adaptive Comfort
- Predictive Mean Vote
- Predicted Percentage of Dissatisfied

WEEK 22-24 • 2 Weeks

M13A. **Solar Studies and Simulations**

- Sunpath model
- Radiation analysis (solar photovoltaic potential)
- Solar hour analysis (outdoor design)
- Shading design and optimization

WEEK 24-26 • 2 Weeks

M14A. **Daylighting Studies and Simulations**

- Industry Standards around daylighting
- Daylight Simulations
- Daylight factor
- Useful daylight illuminance
- Daylight autonomy
- Daylight glare probability

WEEK 26-29 • 3 Weeks

M15A. **Building Energy Modelling**

- Science behind thermal gains
- Building material properties
- Importance of Space Definition and User Profile
- Building Energy Simulation and Comparative Analysis

WEEK 29-31 • 2 Weeks

M16A. **Urban Microclimate Simulations**

Outdoor Pedestrian Thermal Comfort Analysis
(a) Spatial Universal Thermal Climate Index (UTCI) for an urban setting
(b) Spatial UTCI with computational fluid dynamics (CFD)
(c) Microclimate Maps

WEEK 31-32 • 1 Week

M17A. **Lifecycle Carbon Analysis and Net Zero Assessment**

- Building Embodied Carbon
- Carbon Life Cycle Assessment
- Project Net Zero Assessment

M12-17B. **Computational BIM Workflow**

• 12 Weeks | 24 Activities

WEEK 20-22 • 2 Weeks

M12B. **Revit Fundamentals - Geometry + Data**

- Understanding fundamental concepts of Revit elements
- Revit heirarchy – category, type, instance
- Revit elements as geometry and data
- Revit families
- Adaptive components and families
- Parameters – Project, Shared, Type and Instance

WEEK 22-24 • 2 Weeks

M13B. **Programmable BIM Objects**

- Understanding which Revit elements can be programmed
- Revit Floors, Walls, Roofs, Curtain Walls, Curtain Systems (BIM objects)
- Understanding Base Geometry Requirements of BIM objects
- Revit Heirarchy - category, Type, Instance
- Creating sophisticated Revit families (adaptive and system)

WEEK 24-26 • 2 Weeks

M14B. **Rhino.Inside - Interoperability**

- Linking design (Rhino + Grasshopper) and delivery (Revit + Dynamo) software
- Rhino.Inside.Revit (Grasshopper) - UI, components, workflows
- Driving sophisticated Revit geometry or families from simplified Rhino geometry
- Converting Rhino geometry to Revit geometry through Grasshopper
- Querying Revit elements and data through Grasshopper

WEEK 26-28 • 2 Weeks

M15B. **Dynamo - Visual Scripting in BIM**

- Introduction to Dynamo
- Visual scripting in Dynamo
- Automating project tasks using Dynamo
- Information management using Dynamo

WEEK 28-30 • 2 Weeks

M16B. **Speckle - Data Integration**

- Integrating data between many platforms and viewing it on the web
- Simplified efficient interoperability without Grasshopper
- Speckle theory - Commits, Branches, Streams and Versioning
- Speckle web viewer
- Speckle connectors - Rhino, Revit, Dynamo, Grasshopper, Excel, PowerBI

WEEK 30-32 • 2 Weeks

M17B. **Revit API - PyRevit**

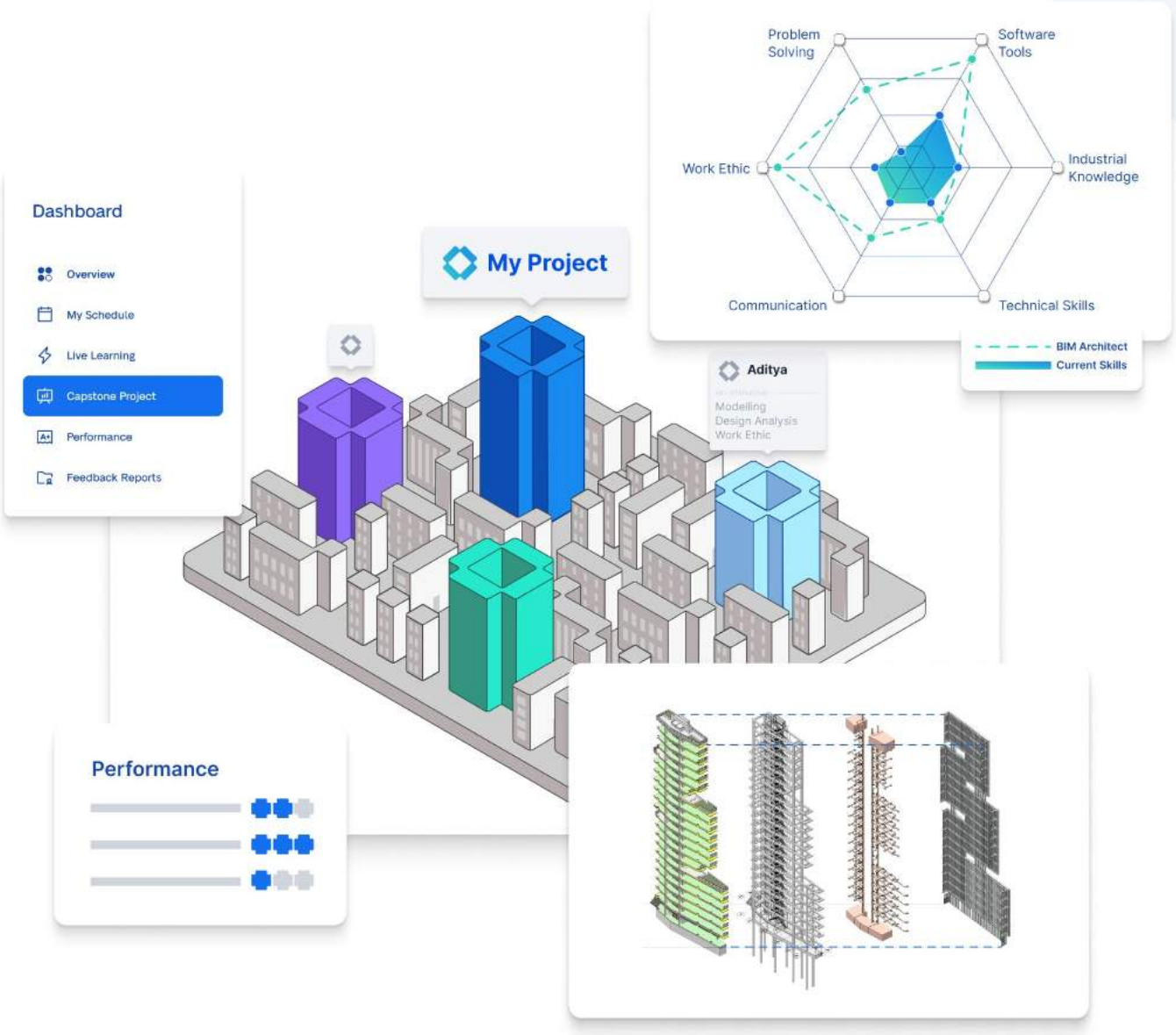
- Extending Revit Functionality for a firm with Custom Tools
- Tools to impact and aid multiple teams in a firm

WEEK 33-34

• 2 Weeks | 0 Activities

Portfolio and Capstone

Get focussed guidance on forging a rewarding career in the domain of Computational Design. This stage also focusses on building your resume and your portfolio with the project completed during the Studio Specialisation.



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EXPERT MENTORS

Mentor Panel

Learn from experts who designed large-scale projects across the world using the Computational Design process.

Ami Nigam

Head of Technology

Benoy, United Kingdom

BENOY

Brice Pannetier

Founder and Design Technology Specialist

Atelier Designa, Australia

A+DA

Rahul Grover

Senior Building Physics & Sustainability Engineer

Buro Happold, United Kingdom

BURO HAPPOLD

Raina Lin

Designer

Heatherwick Studio, United Kingdom

Heatherwick studio

Giuseppe Dotto

BIM Coordinator

UNStudio, Netherlands

UNS
UNSTUDIO

Raghav Swarup

Architectural Designer

Benoy, United Kingdom

BENOY

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Preety Anand

Architect and
Computational Designer

Herzog & de Meuron, Switzerland

H&deM

Sahej Bhatia

Associate

Handel Architects, United States

HANDEL
ARCHITECTS LLP

Sebastian Amorelli

Computational Designer

External Reference, Spain

EXTERNAL
REFERENCE

Pragya Chauhan

Architect and Building Technologist

PHYSEE Technologies, Netherlands

PHYSEE

Praneet Mathur

Founder and Digital Architect

iiterate Technologies GmbH, India

ITERATE
TECHNOLOGIES

Akashjit Singh Bhau

Design Technology Lead

Gensler, United Arab Emirates

Gensler

Shruti Shiva Ganesh

Sustainability Consultant

Sweco, United Kingdom

SWECO

Tarang Gupta

Founder and Building
Physics Engineer

Post 105 Technologies, India

POST105

Aman Jain

Course Director,

Novatr, India

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CAREER SERVICES

Unlock Your Full Potential with Our Comprehensive Career Support

From scouting for jobs to nailing your interviews, you'll have our support every step of the way so that you're set up for success.

Network with hiring partners

Network with hiring partners via a dedicated placements team.

Choose your angel mentor

Choose your angel mentor to get personalised career counselling.

Sit for 1:1 mock interviews

Sit for 1:1 mock interviews and application guidance sessions.

Get structured feedback

Get structured feedback on your resume and portfolio.

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PLACEMENTS

Novatr graduates work with the best

Our alumni work at some of the most reputed and prestigious companies in the AEC industry. Nothing gives us more joy than seeing them succeed.

93%
Placement Success Rate

107%
Average Salary Hike

343%
Highest Salary Hike

AECOM · Jacobs · ARUP · POPULOUS · LARSEN & TOUBRO
wework · BDP. · TATA CONSULTING ENGINEERS LIMITED · RAMBOLL · wsp
BURO HAPPOLD · CUSHMAN & WAKEFIELD · Eckersley O'Callaghan · vcons · dargroup
morphogenesis. · JLL · WME · SYSTRA · ARCADIS
SMEC · SURBANA JURONG · Thornton Tomasetti · STUDIO SYMBIOSIS · Turner & Townsend
studiolotus · Colliers · Stantec · THE BIM ENGINEERS · COWI
TECHTURE · ZYETA · TotalEnvironment · egis · fivD
enventure · SWECO · FLUOR · Lektuo · MOTT MACDONALD

As featured in

arch daily

"Novatr has presented to the world a marked shift from the cookie-cutter approach followed in most architecture schools. It's exciting to consider how far their new pedagogy for Digital-Era learning will transform architecture education."

CERTIFICATION

Not one, but three certifications under your belt!

Upon successful completion of the course, you'll earn a certificate of achievement from Novatr, signed by the course mentor. Add this certificate to your portfolio to improve your future prospects.

CERTIFICATE OF COMPLETION

CONGRATULATIONS!

You have successfully completed an Autodesk® Authorized Training Center® course specifically designed to satisfy your training requirements. Authorized Training Center instructors deliver quality-learning experiences with courses related to Autodesk products utilizing relevant content and comprehensive courseware. Autodesk's vision is to help people imagine, design, and create a better world.

Certificate No. AP702990097342555200333

ANAM KHAN NAME		
BIM PROFESSIONAL COURSE C8 COURSE TITLE		REVIT 2022 PRODUCT
TUSHAR CHOUDHARY INSTRUCTOR	15-OCTOBER-2023 COURSE DATE	33-40 HOURS COURSE DURATION
ONEISTOX INDIA PRIVATE LIMITED AUTODESK AUTHORIZED TRAINING CENTER		

NOVATR | AUTODESK Authorized Training Center

Each learner, upon successful course completion, gets an Autodesk certification for the tools they excel in.

NOVATR previously oneistox

Skill India कौशल भारत-कुशल भारत | N·S·D·C

CERTIFICATE

This is to certify that

Ms./Mr. GOWRI U GOPAN

Son/Daughter of GOPAN PILLAI Student ID CAN_22403035

has successfully completed the BIM PROFESSIONAL COURSE - ARCHITECTURE Course

with Grade A+ from ONEISTOX INDIA PRIVATE LIMITED

Date of Issuance: 29th May 2023

Issued by

Certificate ID: CERT_1141843

Harkunwar Singh
CEO
Oneistox India Private Limited

This is a System-generated Certificate. Assessment and Grading of the Candidate is provided/facilitated solely by the respective training provider based on its evaluation parameters.

In addition, each graduate gets an NSDC certification.

ENROLMENT PROCESS

A Streamlined and Stress-Free Enrolment Process

• Step 01

Apply for the course

Register by entering your name, contact details, and professional background.

• Step 02

Speak to an academic counsellor

Explore how this course can benefit your career and get answers to all your queries.

• Step 03

Submit application to check eligibility

Ensure all criteria match up to the course requirements.

• Step 04

Complete payment and reserve your seat

Secure your spot as a Novatr learner and kickstart your journey!

Eligibility Criteria

1. The application is open to professionals as well as students from architecture, civil engineering, product design, industrial design and visual design backgrounds.
2. Keen to attend but don't match the above criteria? Have a chat with our course counsellor at **+91 9810558923** or **support@novatr.com**.

Click here to chat with us

Call us at +91 9810558923

ALUMNI VOICES

Hear our community talk about their upskilling journeys

Prajwal Kumar
Architect, Studio Symbiosis
141% Salary Hike

The curriculum was well structured – all the series of modules made sense as we progressed through the course. And the mentors are top notch! I couldn't have asked for a better panel of mentors for us.

Review of BIM Professional Course, Cohort 01

Alab Adviento
Computational Designer, United States
Upskilling

It is kind of unfair for other companies as Novatr has such a high standard of learning and it is so engaging here. I never thought of installing these tools when I was in college. Novatr made it really easy for me to understand and learn in practical way.

Review of Parametric Modelling Course, Cohort 03

Marvit Ahanonu
Architecture Student, Canada
Upskilling

The courses are very customer centric. I learnt how to decode my design in parametric forms and express myself better in the architecture and design world! This gave me an upper edge in the workforce as well as to build portfolio!

Review of Parametric Modelling Course, Cohort 06

Aditya Gupta
Architect, DAR
26% Salary Hike

This course has been an eye opener in terms of understanding how the AEC industry has changed and how we need to be a part of this change. The enthusiasm of Novatr team was heartwarming and to see an organization work so hard to make a difference for their students was really nice.

Review of BIM Professional Course, Cohort 01

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Ayya Permataseri

Architecture Student, United Kingdom

Upskilling

Novatr literally made learning easier for me. I've been watching tutorials but nothing compares to the hands-on learning experience they're offering. They broke it down into easy-to-digest concepts, tips, tricks and exercises to do so that everything is applicable.

Review of Parametric Modelling Course, Cohort 02

Mohamed Rizwanul Hassan

Architect, DAR

160% Salary Hike

I would like to thank the mentors who shaped up all the modules in a beginner-friendly way. All the mentors were very knowledgeable and despite their busy day would still be super responsive to answer any doubts. The one thing I've gained is an enormous amount of confidence to go ahead in my career as BIM professional.

Review of BIM Professional Course, Cohort 01

Diya Dechamma

Architect, DAR

First Job

Being a last-bench student back in University, I used to bunk many theory classes and was therefore doubtful of whether or not I'll be able to sit for every session in this course. But seriously, the whole Novatr team shaped the course in such a crisp way that I never felt like skipping a single class!

Review of BIM Professional Course, Cohort 01

Mahaveer Bothra

Practicing Architect, New Delhi

Upskilling

I have done 3-4 courses with Novatr and my experience is always been great. Since learning new things from Novatr is always eye opening. The skill of these new tools are in my hand now and I can easily use them to create something good.

Review of Parametric Modelling Course, Cohort 01

Bhavay Malhotra

Architecture Student, New Delhi

Upskilling

Novatr lies in the goldilocks zone of learning. In contrast to architecture and design school, the environment here was constructive complimented by the right amount of examples and concepts to practice, learn and apply.

Review of Parametric Modelling Course, Cohort 05

Bharti Dilip Pandey

Practicing Architect, Canada

Ongoing Batch

A huge batch of students, yet each of us has an industry guide to solve our silliest doubts which is extremely helpful. The best mentors teaching the practical issues of projects in BIM. I'm glad that I have signed up for this course.

Review of BIM Professional Course, Cohort 04

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FEE STRUCTURE

Learn With Easy EMI Plans. EMI options starting at Rs. 13,333/month.

India

Total Program Fee

₹3,45,000

(incl. taxes)

Course fee in installments

₹25,000

Down payment to be made to book your seat

Tenure	Monthly EMI
6	₹53,333/month
9	₹35,555/month
12	₹26,666/month

You will be provided guidance on how to avail for zero cost EMI from NBFC and credit card partner after the downpayment.

Get a discount of ₹25,000 on full payment

~~₹3,45,000~~ **₹3,20,000**

Payment types accepted

UPI · VISA · mastercard

EMI Providers: Eduvanz, Credenc, PropelId, LiquiLoans

Abroad

Total Program Fee

$4800

(incl. taxes)

Course fee in installments

$600

Down payment to be made to book your seat

Tenure	Monthly Breakdown
6	$700/month

6-month instalments option available only for international credit card holders.

Get $300 discount on full payment

~~$4800~~ **$4500**

Payment types accepted

VISA · mastercard · PayPal · stripe

*If you need an **EMI plan that exceeds 12 months**, simply reach out to our support team and we'll be happy to assist you.

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NOVATR

Empowering next-gen architects and engineers

Over 3,000 students have upskilled with Novatr and landed their dream jobs. Will you be next?

Start Application →

To know more about enrollments contact us at
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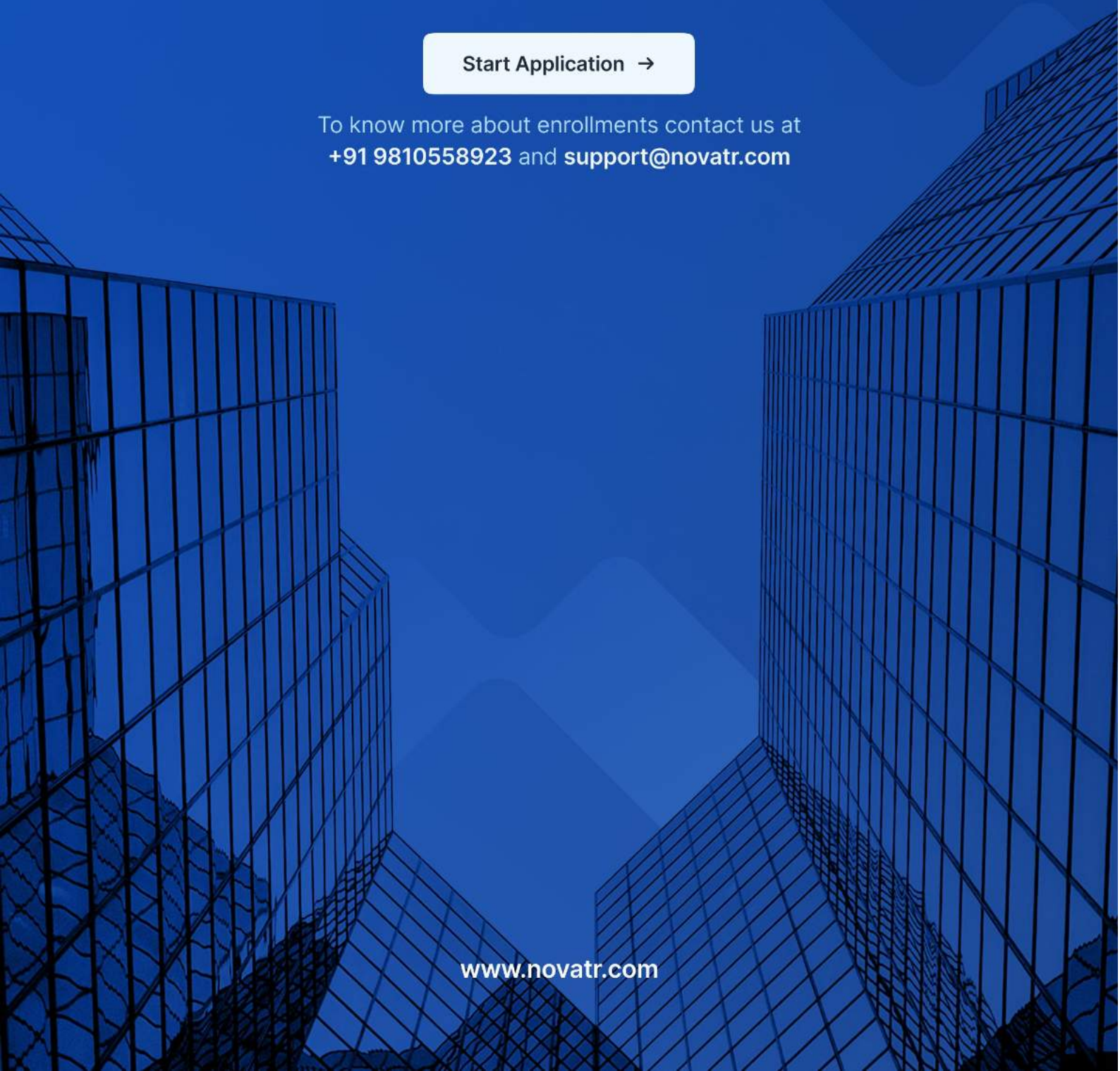

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