



INTERNATIONAL
TECHNOLOGICAL
UNIVERSITY

NEW NUGGET COURSE

IDS 553 3 Digital Design and Manufacturing

11/16/2020 - 12/20/2020
R 5:00 PM-7:00 PM

Instructor:
Stefan AI, PhD

Want to 3D print your own home?

Technology is fundamentally disrupting the construction industry, allowing buildings to be created faster, better and with more advanced shapes. In the Digital Design and Manufacturing Nugget course, students will learn how to use digital design to manufacture your own project with 3D printers, CNC millers and waterjet cutters.

Upon completion of this course the student will:

1. learn about digital design, procedural design, and computational fabrication techniques
2. be able to apply Rhino 6 and Grasshopper to create complex and buildable geometries
3. use digital design to develop new design directions for buildings

Course Description

5 Week Course 3hrs / Week

This studio course introduces students to the basics of digital design and manufacturing. Students will get familiar with basic 3D modeling, procedural design, and computational fabrication techniques, otherwise known as CAD/CAM (computer-aided design ; computer-aided manufacturing). In addition, they will design and manufacture an architectural installation, such as a small pavilion, room, or object.

Industry Related Job Opportunities :

Digital Design and Manufacturing
CAD/CAM (computer-aided design; computer-aided manufacturing)
Basic 3D Modeling, Procedural Design, and Computational Fabrication Techniques
Rhino 6 and Grasshopper Applications for Buildable Geometries

Benefits of taking the nugget course :

Study under Stefan AI, an award-winning architect and expert in the field.

Required
Software/Hardware:
Software that would
be helpful for this class:
3D modeling software:
Rhino 6, Maya, 3DMax, or
SketchUp;
Image editing software:
Adobe Photoshop.

International Technological University

Canton Tower
Designed by Stefan AI, PhD



Stefan AI, PhD

Dutch Architect
Urban Designer
TED Resident

He believes that with smart design we can create the most inspiring buildings and sustainable cities.

As a designer he contributes to a number of mixed-use and transit-oriented developments, master plans, and high-rise towers across the world. Through his work, he aims to promote environmental sustainability, health and wellness, and urban vitality.

Stefan started his career as a designer at Information Based Architecture in Amsterdam, winning the competition and commission for the 2000-foot tall Canton Tower, which briefly held the title of the world's tallest tower. The project, known for its elegant silhouette and technological excellence, is the most popular attraction in Guangzhou and widely appreciated as a landmark throughout China.

In addition, he has served in various capacities to major institutions, such as the World Heritage Center of UNESCO, working on the preservation of world heritage in Latin America, the Hong Kong government, consulting on the development of the city's harbor and external lighting guidelines, and to the United Nations High-Level Political Forum on Sustainable Development, serving as an expert on compact city design.

Stefan is committed to teach the next generation of architects, urban designers, and urban planners.

He currently serves on the faculty of Columbia University, Pratt Institute, the City University of New York, and Tongji University. Besides teaching students, he trains professionals to design for environmental sustainability as a consultant for Urban Green, a non-profit dedicated to transform New York City buildings for a sustainable future in response to climate change.

Over the years, he has served as a professor at the University of Hong Kong and the University of Pennsylvania, where he directed the urban design program and co-taught an online course, Designing Cities, with more than 70,000 students.

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