

CARNEGIE MELLON —ARCHITECTURE



Robotic Milling

48-545/48-745: Design Fabrication

Units: 9

Instructor: Misri Patel

What is the role of speculative architectural thinking when the transition from conceptualization to physical realization happens instantly? How can we create speculative physical models when everything is designed digitally? The impact of digital design and technology extends beyond conceptualizing and designing buildings. It has also revolutionized the manufacturing and construction of buildings, thanks to advancements in aerospace, automotive and shipbuilding. This course represents an evolving think-tank that explores the synergy between computer-aided design and advanced fabrication techniques. The course comprises lectures, computational design workshops, prototyping, critical readings and collaborative teamwork. Through hands-on labs, students gain practical experience with 3D printing, CNC machines and industrial robotic arm, which serves as a foundational introduction to fundamental concepts in manufacturing and fabrication. Rather than viewing this technology solely as a means of generating outputs, the course emphasizes a craft-based approach. It requires designers to first acquire and master the tools of their trade before proposing viable designs.

