

ARCH 4/573 Fall 2025

ADVANCED MASS TIMBER DESIGN

CRN 16823/16824

Instructor Uli Dangel, Professor | dangel@uoregon.edu

Location Lawrence 278

Time Tuesday, Thursday 10:00 – 11:50 am



From the Class Schedule:

In-depth examination of mass timber buildings, advanced wood products, timber industry, production, integrated design process involving Architectural Engineering and Design industries, structural systems, and case studies.

Course Summary

This course explores recent innovations in timber construction technology and their impact on the current and future discourse of architecture, engineering, and interior architecture. Students will investigate wood's newfound potential as a high-performance construction material and evaluate its impact on local and global economies, ecologies, and societies.

The seminar will examine current timber harvesting and processing methods, the production of engineered wood products, and their application at various building scales, ranging from rural single-family dwellings to high-rise structures in dense urban settings. Relative to other conventional construction materials and systems, wood as a structural and finish material will be evaluated regarding its effect on human health and well-being, aesthetic and poetic qualities, life cycle assessment, energy consumption, carbon sequestration, and global warming potential.

The course will incorporate a series of case studies of built projects. Guest speakers will include architects, engineers, and construction professionals who have collaborated on mass timber building projects as part of integrated teams.

Learning Outcomes

This course will provide students with the ability:

- To understand the major factors that influence the design of mass timber structures
- To understand the environmental benefits and impacts of mass timber products in buildings
- To synthesize technical information in mass timber building systems to produce and critique case study projects
- To make assessments in the areas of material, form, and fabrication regarding mass timber construction
- To work both individually and collaborate
- To understand complex issues efficiently and present them effectively.