



Advanced Design of Timber Structures

Gain a better understanding of timber products and the fundamentals of structural dynamics as they relate to timber structures

Explore timber structure design innovation

OVERVIEW

As part of the sustainable urbanization effort in North America and Europe, the use of timber as a structural material has substantially increased in the past few decades. Timber is a sustainable and renewable construction material.

The 2020 National Building Code of Canada allows mass-timber construction for buildings up to 12-storeys, increasing from the 2015 NBC allowance of six storeys. As a result, it is paramount for civil engineering graduates to understand the design of structures whose primary load resisting system is made of timber. This course introduces students to timber material properties, structural design of timber elements (beams, walls, columns) and connections, and design of low-, mid-, and high-rise timber buildings.

CONTENT

- Intro to structural timber & construction
- Intro to dynamics of structures, earthquake, & wind engineering
- Evaluation of loads and load combinations using NBC
- Design of beams and columns
- Design of timber connections
- Design for CLT shear walls and diaphragms
- Design mass-timber buildings for gravity loads
- Lateral design of mass-timber buildings

COURSE FORMAT

This course, ENGR 598Y, is a three-hour weekly lecture through Zoom. The class is scheduled on Monday's and Wednesday's from 4:30 - 6:00 PM (PST), Term 2 (Jan 04, 2021 to Apr 08, 2021).

INSTRUCTOR

Dr. Solomon Tesfamariam, P.Eng is a UBC professor and leading authority in the areas of infrastructure management, hybrid building design, and risk management of civil infrastructure systems. He develops multi-hazard risk based decision support tools that help to protect infrastructure from catastrophic events such as earthquakes, wind and fire. He sits on the Systems Design and Connections Subcommittee of the Canadian Wood Council's CSA O86 - Engineering Design in Wood.

FOR MORE INFORMATION

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