This studio immerses students into computational design collaboration, simulation and fabrication of timber structures. Working in an integrated design team, students will learn how technology is shaping Materials (engineered wood products), Design (parametric modeling and virtual testing), and Construction (manufacturing and assembly). Co-taught with Oregon State University (OSU) Associate Professor Dr. Mariapaola Riggio, an architect and structural engineer who specializes in timber, this studio provides a unique chance to partner with OSU students from fields such as Wood Science, and Civil and Construction Engineering.

Students will develop design agility through creating and evaluating quick design variations. The class will sequentially focus on key timber structural systems such as trusses, plates, and gridshells. After studying exemplars of the system, each team will model versions of it and design a simple structure using the system. For selected designs, students will examine appropriate materials and design connections, devoting the last weeks of the course to detailing and prototyping one building design. The emphasis will be on designing, analyzing, detailing and prototyping the building system.

From taking this course students will
- Review classic structural systems and their use in contemporary timber practice
- Learn how to design and analyze parametric variations of timber structures
- Practice integrated AEC collaboration workflows and visualize construction processes.
- Learn the design implications of how wood materials can be engineered, manufactured and assembled
**Hybrid Format**

This studio will combine online and in-person teaching, with course materials available online and face-to-face interaction in small groups. While generally students are expected to be available MWF 1:00-4:50pm for class sessions, there will be some flexibility for shifting work to asynchronous or synchronous interaction outside of these hours.

We will connect with OSU five hours per week for team design, simulation and fabrication troubleshooting and seminars. Hours will be reserved in the woodshop for crafting components, joints and assemblies. These plans will adjust to follow University public safety guidelines and workshop availability. Two field trips to OSU will be scheduled in week 1 (to meet partners on the first day of class) and in Week 11 (for a technical review).

This studio builds four previous iterations of the Timber Tectonics class, with deep resources on cutting-edge timber structures, including lectures from industry experts.