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 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, Civil Engineering and Construction Management.

Term Project: Students will work in teams during the term to develop a project for a Nomadic Performance Space. This will give an opportunity to experiment with large-span structures, innovative connection solutions (for easy assembly, disassembly and reuse), and engineered wood products.

The class will sequentially focus on key timber structural systems, studying strong examples and then using the system to design and assess modular parts of the performance space (stage, seating, canopy/enclosure). Students will be coached in parametric design and structural analysis to support creating and evaluating design variations. With partners, students will examine appropriate materials and design connections, and gradually develop details and assemblies through physical prototyping. The emphasis will be on developing digital workflows for collaborative designing, analyzing, detailing and prototyping.

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 online and face-to-face interaction in small groups. We will connect with OSU five hours per week for team design, troubleshooting, fabrication and seminars. 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 to accommodate woodshop and partner availability. According to student schedules, hours will be reserved in the woodshop for crafting components, joints and assemblies. These plans will adjust to follow University public safety guidelines. On Wed Sept 29, a field trip to OSU is scheduled to meet partners and tour Mass Timber facilities, 12 pm departure, ~5:15pm return.

This studio builds four previous iterations of the Timber Tectonics class [http://timbertectonics.com](http://timbertectonics.com) with deep resources on cutting-edge timber structures, including lectures from industry experts.

Off-site pre-fabrication (above) and on-site pavilion assembly (below) illustrated in a project by Joel Mbala-Nkanga, Jasmine Martinez, Walker Maddalozzo and Emily Pollman