This studio immerses students into computational design, simulation and digital 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.

Students will develop design agility through creating and evaluating quick design variations. Sequentially, we will focus on key types of 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 building 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 of the building designs.

**Cabin, Village, Community space**

The design brief is to incrementally inhabit an empty lot, initially with temporary sleeping cabins and simple washing facilities, then a community space, with a vision for how the cabins could be replaced. The studio will examine how connections can enable temporary timber building systems for quick assembly and sustainable disassembly. Students will design versions of a housing unit that could be pre-manufactured using engineered wood products and rapidly assembled on site. They will subsequently consider how long-span structures could generate a common hall (i.e. for cooking, hygiene, medical services, storage). The emphasis will be on designing, detailing and prototyping the building systems using digital tools, within a larger context of creating humane semi-private and public spaces that foster community.
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 these systems
- Practice integrated AEC collaboration workflows and visualize construction processes.
- Learn the design implications of how wood materials can be engineered, manufactured and assembled
- Address individual and collective needs in a residential village

The studio builds three previous iterations of the Timber Tectonics class, with deep resources on cutting-edge timber structures, including lectures from global leaders; and four previous studios on intentional communities.

Hybrid Format
This hybrid course will provide online materials for asynchronous study and face-to-face interaction as public-safety allows. We will connect with OSU Mon 1:00-2:50PM typically for team design, simulation and fabrication troubleshooting and Wed 1:00-2:20PM for guest and student-led seminars. Hours will be reserved at the Northsite woodshop for crafting components, joints and assemblies.

<table>
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<tr>
<th>Monday</th>
<th>Tuesday</th>
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<th>Friday</th>
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<tbody>
<tr>
<td>1:00-2:50PM Teamwork w/OSU</td>
<td>1:00-2:20PM Seminar w/OSU</td>
<td>1:30-2:50PM Group 1 in studio</td>
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<td>3:00-4:50PM Group 1 in studio</td>
<td>3:00-4:50PM Group 2 in studio</td>
<td>Woodshop TBA</td>
<td>3:00-4:50PM Group 2 in studio</td>
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Two field trips to OSU will be scheduled for Sept 30 (to meet partners on the first day of class) and a technical review in Week 11, Thurs Dec. 10 at 2:45pm (to be confirmed)