

university of oregon - school of architecture and allied arts - department of architecture
ARCH 410/510 SPRING 2019 MW 8:00-9:20 CRN 30392 / 30479; Lab Th 15:00-15:50 CRN 36843 / 36844
Choose 6.5 weeks = 2 credits OR 11 weeks = 4 credits to fulfill the **ADVANCED TECHNOLOGY** requirement.



Kaeng Krachan Elephant Park, Markus Schietsch Architekten, Zurich, image by Wikimedia

TIMBER TECTONICS in the digital age

Timbertectonics.com



Instructors: **Nancy Yen-wen Cheng**
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Dr. Mariapaola Riggio, architect and engineer
Oregon State University, Wood Science & Engineering

Tectonics is the art of deploying construction technology so that it plays an integral role in shaping a design. This course will focus on the three main factors that determine a building's tectonics: the material, the tools and the design. Timber as a building material is experiencing a resurgence with the development of advanced wood products which may be custom engineered to open up new technical and design possibilities. Computing is dramatically altering design and material processes, and requiring new kinds of team workflows.

The class will study how classic timber structural systems are being transformed through digital techniques. Through readings, lectures, discussion, and hands-on digital exercises and physical prototyping, students will be encouraged to think creatively and critically about how digital tools can support the tectonic quality of timber buildings.

After orientation and team-building, the class will

have Monday timber structures instruction via video-conference with architect and engineer Dr. Riggio, Wednesday computer lab sessions, and Thursday woodworking sessions. To apply the technical skills and simulate real-world collaboration challenges, students will develop group design and fabrication projects with OSU students from fields such as wood science, construction management and engineering.

There will be four full-group face-to-face meetings two visits to Corvallis:

- week 1 (W April 3@7:45am-12:30pm) & week 11
- two Eugene design reviews:
- week 6 (F May 10) and week 8 (F May 24)

Pre-req: ARCH 4/561. Rhino Grasshopper for parametric modeling and Karamba structural analysis will be taught. Prior knowledge of Rhino GH is helpful but not required. Students may take an intensive software workshop Saturday April 6 in Corvallis.