ARCH 4/510 Spring 2023

WOOD FAB 1 - COMPUTATIONAL DESIGN AND FABRICATION FOR TIMBER CONSTRUCTION

CRN 36443 - Tuesday Thursday - TBD Lawrence Hall 10:00-11:50

Instructor: Asst. Prof. Dylan Wood, dmwood@uoregon.edu

This course introduces students to the basics of computational design and digital fabrication for timber construction through lectures, tutorials, and design exercises. The focus is on analyzing and understanding the strategic use of digital fabrication with wood materials and developing methods to enable novel architectural design. In the first part of the class we will review the basics of digital fabrication and how fabrication machines work while analyzing state of the art projects. The middle of the course will be structured around tutorials and a design exercises to parametrically model and mock up the fabrication process of a component based construction system based on specific wood materials (waste pieces from existing TDI projects) and subtractive 7-axis robotic machining. In the last third of the class students will work together as a team on exercises to test and manufacture a number of selected components in collaboration with the Tall Wood Design Institute and the AA Emmerson Lab at OSU. Students are expected to produce a report and a collection of clean digital files for each exercise to be evaluated at the end of the semester. The course is primarily in person and involves required field trips. Existing familiarity with 3D modeling software (Rhino and Grasshopper) and a willingness to experiment with developing new digital methods is required. The course is a recommended pre-requisite for the seminar WOOD FAB 2 (planned fall ’23) which will explore additive methods of robotic fabrication and machine interaction with regenerative materials.