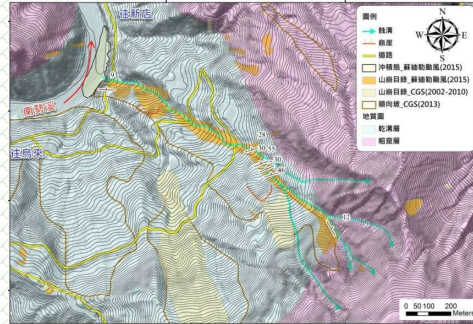


Planning and Hazard Assessment for a New Pedestrian Trail in the Xitou Nature Education Area

In the Xitou Nature Education Area of the National Taiwan University Experimental Forest, the existing pedestrian trail network is mostly limited to the lower slopes, close to built areas. To improve the experience of visitors seeking more remote and challenging trails, NTU Experimental Forest is considering the addition of a new trail, to be sited in a steeper area. To develop proposals for this new trail, we are seeking student teams interested in route planning, hazard assessment, GIS, and surveying to pursue the following tasks:



- 1) Map and assess natural hazards like torrential flooding, landsliding and debris flows in the target area
- 2) Propose a new trail route taking into account topography, hazards, landmarks, and user experience
- 3) Survey the proposed trail corridor using ground and UAV surveying
- 4) Optimize the trail path using least-cost, maximum benefit routing
- 5) Propose preliminary designs for special trail segments like a torrent crossing or cable descent

The section is targeted at junior and senior undergraduates as well as first year master students interested in natural hazard assessment, route planning, surveying and engineering geology. It will include at least one three-day survey campaign on site, to be scheduled based on the constraints of participating students and our NTU Experimental Forest colleagues.

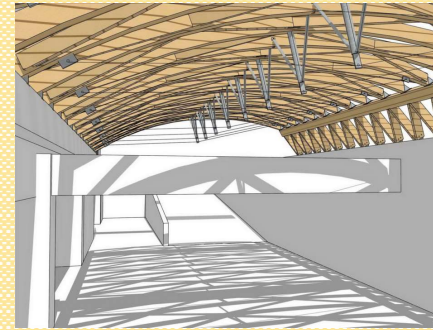
Instructors:

Tai-Tian Wang and Hervé Capart

Schedule:

Monday 234(9:10am~12:10pm)

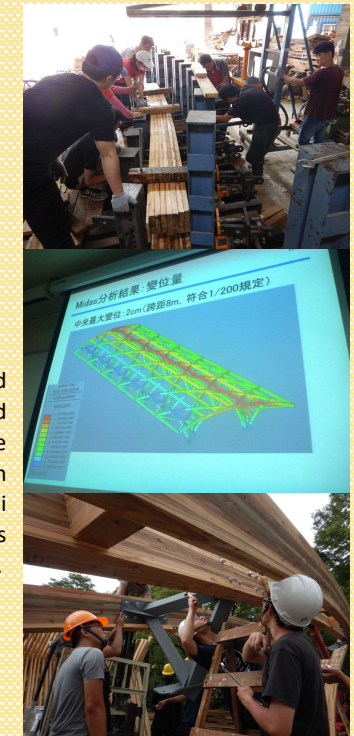
Detailed Design and Prototyping of a Roof-Supporting Wood Structure for the Civil Engineering Research Building Basement



To shelter future student fabrication projects involving steel and wood work, the NTU Dept of Civil Engineering is considering the installation of a new roof over one of the open spans of the basement parking lot of the Civil Engineering Research Building. A preliminary design for a roof-supporting wooden structure has been proposed and prototyped by earlier capstone students, but requires further development to improve feasibility, structural safety and architectural quality. To pursue these goals, students will work individually and in teams to pursue the following tasks:

- 1) The development and analysis of design variants for the roof-supporting structural system
- 2) The detailed design of the wood members and steel connectors
- 3) The fabrication in wood and steel of a partial, reduced scale prototype of the structure
- 4) The detailed design of the roof structure, outer skin and connections to the existing structure
- 5) The drafting of design drawings, a structural calculation report and budget estimate

The section is targeted at junior and senior undergraduates interested in structural and architectural design, wooden structures, and construction management. The fabrication of the partial prototype will take place during a full-week internship at the Wooden Utilization Center of National Taiwan University Experimental Forest in Shuili Township, Nantou County, to be scheduled based on the constraints of participating students and our NTU Experimental Forest colleagues.



Instructors:

Wen-Cheng Liao, Masatoshi Tomita, Hervé Capart

Schedule:

Monday ABC(6:20pm~9:10pm)

Civil Engineering Capstone Challenge Spring 2021

- To sign up for either course, please fill and submit the form.
- If they wish to work as teammates, students are encouraged to sign up together (by submitting a joint form).
- If the maximum enrollment is exceeded, participants will be selected at random. Please select at least 2 courses among the 5 sections. MSc students or students wanting to take the course a second time can obtain credits via optional course Civil Engineering Consulting Practice.
- If any questions, please contact TA Oscar, Yu-Jun, Huang
Email address: yjh1234@ntu.edu.tw

Sign up link:
<https://docs.google.com/forms/d/e/1FAIpQLScq4rzDzpYgDSR101ssEp0JmPZBHsJrEfyW3fiOUZpDe126CQ/viewform>

