PROJECT BASED LEARNING FOR MASTER STUDENTS – CASE “INTEGRATED INTERIOR WOODEN SURFACES”

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ABSTRACT: Engineers and architects have to master the knowledge and the skills of their own field of science. Furthermore also interactional skills and the ability to work in an interdisciplinary group are needed to evolve into expert. It is increasingly important that students have an opportunity to practise all these skills during their studies. This paper describes the development of the project based course “Integrated Interior Wooden Surfaces” for Master’s level students of wood technology and wood architecture at Aalto University in Finland.

KEYWORDS: project course, interdisciplinary teaching, wooden interiors

1 INTRODUCTION

Wood architecture and wood construction are taught in the three different departments at Aalto University. This paper describes the development of the project based course “Integrated Interior Wooden Surfaces” that is developed to make the working in an interdisciplinary group possible for the Master level students of wood technology, wood architecture and wood construction.

2 LEARNING OBJECTIVES

The aim of the course has been that students learn to know the chosen special properties of wood as interior material and understand that using wood as interior material and marketing of it is always related to its functional properties. In addition to this, the students learn to plan and to schedule a short project in a group and to search for information related to a research topic, to make an experimental plan based on a given framework, to analyse the results and to write a report of the project.

3 TEACHING METHODS

The course consists of lectures given by visiting lecturers, a project work completed in groups and writing a lecture and learning diary during the course. In these learning diaries the students have processed the course issues and reflected the group work as well. No examination has been seen necessary.

The themes of the lecture topics covered were emissions of wood, fire safety of wood, acoustics, wooden load bearing structures and durability of wood.

The research topics included antibacterial properties of wood, moisture buffering capacity of wood, cleanability of wood, sorption of wood, transformation of wood and effect of UV light on the visual properties of wood. The topics have varied somewhat every year. As an example, Figure 1 illustrates students working with the topic “The Effect of UV Light on the Visual Properties of Four Wood Species with Four Surface Treatments”.

Figure 1: Students are testing specimens with a colorimeter.

Students’ ideas and the results they have obtained through their research have been both interesting and functional and it has been rewarding for the teachers to follow students’ thinking process. Figure 2 depicts
specimens that have been soiled to test the cleanability of differently treated wooden surfaces.

Figure 2: Clean and soiled surface test – the students developed a method to study maintenance of wooden surfaces. The specimens in the picture have been soiled just a moment before. The chemicals from the top row: sunflower oil, dishwashing liquid, coffee, salami, balsamic vinegar, satsuma, mud and butter.

4 RESULTS

The greatest challenge for the teachers has been tutoring the interdisciplinary student groups and helping students with varying backgrounds and different study cultures to work together. The academic year is divided into four periods in Finland which means in practice that all the work in one course has to be accomplished in approximately seven weeks. This time limitation does not allow becoming acquainted with other students before the project work begins. The period sets limits also to the types of projects that can be included in the course.

On the other hand, working in the interdisciplinary group simulates the working life well and students learn skills that are useful when they graduate and begin their careers as professionals of their own field. Feedback from the students has been collected every year. This way of organizing a course can be highly recommended for interdisciplinary student groups.

ACKNOWLEDGEMENT

The authors would like to thank all the students and co-teachers of the course for their active participation.