



Timber and Composite Construction

At present, two trends in particular are influencing construction methods in structural engineering and bridge building. First, a growing interest in sustainability is leading builders to use wood construction methods more often. Second, high-performance materials other than the classic steel-concrete composite are increasingly being combined in an intelligent way. Working with wood and composites in construction calls for a thorough knowledge of the materials being used, as well as of statics. As new challenges arise in future, the fields of both wood and composite construction are going to need specialists with specific expertise in these areas.

The Bern University of Applied Sciences has been conducting research for many years into combining wood with concrete or other effective materials. It is also an internationally known and recognised centre for teaching and research in the area of wood technology and wood construction. Laboratories equipped to the highest standards offer ideal conditions for carrying out professional and scientific work on concrete projects and problems. Experienced specialists with access to well-equipped laboratories and field instruments pass on up-to-date expertise drawn from current projects. These are ideal conditions for a master's degree course based on research and development.

Course contents

You will be taught the principles of wood and composite construction by means of both the theoretical fundamentals and current research projects. You will learn to develop effective details and understand how they function. You will learn more about the characteristics of the various materials and how to apply each one correctly in construction.

You will be initiated in the correct techniques for modelling building elements in composite materials and wood, learning the numerical approach, as well as the proper technique for each material. This will enable you to draw up concepts for unusual planning tasks and carry them out optimally in terms of building techniques. You will conduct research in the areas of materials technology, joining and adhesion techniques as well as applied building physics.

During your course of studies, you will start working independently on projects in the areas of wood and composite construction; you will be able to choose from a number of professionally run research and development projects in the research unit. Project work and your master's thesis will be carried out on the basis of current research and service projects in these areas.

Specialists in timber and composite construction develop designs and constructions for unusual planning tasks, using materials appropriately.



As part of your specialisation in «Timber and Composite Construction» you will acquire greater knowledge of one or more of the skill sets below. You may also combine them with skill sets from another specialisation within the Master Research Unit «Integral Planning and Construction».

Timber construction

Both private individuals and public authorities are turning increasingly to building in wood in the light of stricter requirements for energy efficiency and sustainable construction. There is also an awareness that wood is the only building material that can be re-grown and replaced sustainably. This heightened demand requires more well-trained specialists capable of taking on the challenging planning work involved.

As a specialist in wood construction, you will apply all your expertise to designing and measuring challenging wood construction projects. You will be ideally qualified to prove your talents in consulting engineering firms, or in other parts of the wood industry.

Composite construction

As a specialist in the area of composite construction, you will be in a position to help build successful and fine structures in the areas of structural engineering and bridge building. You will be able to design buildings that are fast to build and have flexible ground plans, thus making them more attractive in financial terms.

Your work will consist not only of determining the required cross-sections and systems in keeping with the relevant regulations, but also of designing all the connections that play a large part in ensuring the efficiency of composite structures.

Qualifications for admission

Bachelor of Science in Civil Engineering (FH, ETH)

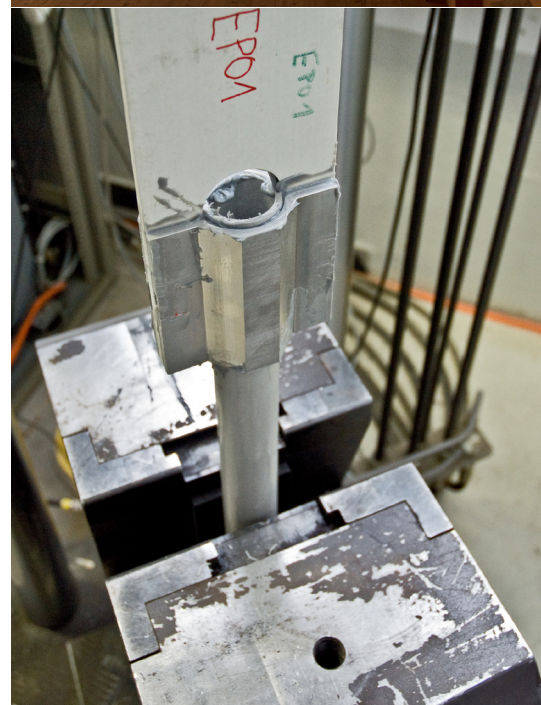
Dipl. Ing. in Civil Engineering (FH, ETH)

Bachelor of Science in Wood Engineering (FH)

Dipl. Ing. in Wood Engineering (FH)

Materials scientist

Applicants with qualifications in other disciplines will be considered on the basis of written applications



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