



List of dissertation topics and mentor for the study program Economics and Management in Forest and Wood-processing Complex for the academic year 2024/2025

Mentor name	Dissertation topic
<p>prof. Ing. Iveta Hajdúchová, PhD.</p>	<p align="center">Economic and financial aspects of the use of forest dendromass</p> <p>Dissertation thesis based on information and inputs from the analysis of the demand for dendromass, which is represented by the processing capacities of pulp and paper, wood and energy companies in Slovakia, and the supply represented by the available amount of dendromass produced by forestry, as well as the analysis of the impact of changes in demand and supply for individual types of dendromass on the development prices, will deal with the development of the gross added value of forestry and its performance. The aim of the work will be the analysis and prediction of financial flows and financial stability of companies and thus the entire forestry sector and its dependence on internal and external sources of financing. New methods and procedures for analyzing financial flows, methods for predicting financial stability and optimizing the property and capital structure of forest enterprises will be applied to reveal and analyse the dependencies of free financial resources for financing forest enterprises.</p>

<p>prof. Ing. Iveta Hajdúchová, PhD.</p>	<p style="text-align: center;">Analysis of the efficiency of investments in the processing of dendromass for energy purposes</p> <p>In connection with the development of the situation in the area of the energy crisis, the development of energy prices and the requirements of green initiatives to protect the environment, the share of the use of heat and electricity based on renewable sources is growing. The aim of the dissertation is the analysis of the economic efficiency of investments in terms of capital costs and the risk of investing in the processing of dendromass for energy purposes. The results of the work should lead to the proposal of criteria, methods and procedures that need to be applied when assessing the effectiveness and optimizing investments in dendromass processing technologies for energy purposes.</p>
<p>prof. Ing. Miloš Hitka, PhD.</p>	<p style="text-align: center;">Talent Management in Terms of Wood-processing Industry</p> <p>Managers are an integral part of every company. The terms talent management and career management can be understood as a continuous process of planning, acquiring, selecting, developing, managing, and evaluating gifted employees. Talent management is a competitive advantage and a strategic tool for the enterprise in a competitive environment. The essence and goals of a manager's career, the criteria, and the management of a manager's career are determined in the dissertation thesis. Subsequently, the method of succession planning in wood-processing enterprises in the form of talent acquisition, development, and retention is defined. The result of the thesis will be designing a career management model and talent management for wood-processing enterprises in the form of identification of critical jobs in the enterprise, identification, and development of talent, stabilization of talent, and its effective long-term sustainable performance.</p>
<p>prof. Ing. Miloš Hitka, PhD.</p>	<p style="text-align: center;">Dependence on the motivation and corporate culture of employees of the forestry and timber complex</p> <p>If the company wants to be successful and wants to achieve the set goals and develop further, it is necessary to focus on the management and maintenance of human resources. According to current trends, these are considered to be the most important capital it has. The human resource management system itself consists in creating effective fulfillment of the business concept of the company based on maximizing the performance of the personnel. Individual areas of human resource management are, however, closely connected and interconnected. A useful tool that clearly and unmistakably distinguishes one company from another is corporate culture. It provides businesses with an opportunity to gain competitive advantage and also has a direct impact on their performance. In this view, there is a tool that can increase the willingness of employees to commit to the corporate goal. It is generally considered to be a relatively closed and specific cultural system formed by the values that organizations espouse, as well as the norms or rules that they follow in achieving the same goals. Corporate culture can act synergistically in favor of a particular business and unite its employees by creating a work environment that helps improve the business and its sustainability and helps in its innovation and change. Employee motivation is another important element that leads to high employee</p>

commitment, efficiency, quality, success and development of the company. The task of managers is to know the needs of their employees, which motivate them to work throughout their working life. Many managers are convinced that motivation comes from their personal qualities, but good motivation lies primarily in treating employees correctly, rewarding them and creating working conditions. Motivated employees are more productive, more active, make a sufficient investment in work, provide higher work value, which leads to higher work performance. We can say that motivation is an element of business success with higher productivity. The aim of the work is to define the dependence of the mentioned areas of human resources management (employee motivation and corporate culture) for the employees of the forestry-timber complex.

prof. Ing. Ján Holécy, PhD.

Economic analysis of forestry projects in the presence of specific risk concerning forest land management.

The volume of the physical production of Slovak forestry and its value are significantly influenced by the increasing risk of detrimental natural elements occurrence as one of the ongoing climatic change manifestations. Despite of this fact, the reliable methods for prediction of both this kind of risk and the measurement of its impact on the profitability of capital investments to long-term forestry projects have not been proposed, so far. The objectives of a dissertation are (1) the information about the level of specific risk concerning forestry projects and its future development and (2) the reliable information about the impact of this kind of risk on the profitability of projects. The methodological procedure for approaching these objectives includes a specification of comprehensive natural elements occurrence risk of forest land management and a following economic analysis of this kind of risk on the soil expectation value, the value of forest stands, as well as the value of other important outputs of forestry. The expected result of a research is the mathematical formulation of models for the calculations of soil and forest stands expectation values in relation to the forestry projects risk under conditions of ongoing climatic change. Expected is also knowledge about the impact of this kind of risk on the optimum period of rotation.

**doc. Ing. Andrea Janáková Sujová,
PhD.**

Determinants of a performance in the wood processing industry

The thesis focuses on research on the determinants of wood processing industry (WPI) performance with a link to WPI competitiveness. The aim of the thesis is to identify the factors influencing the performance of WPI and enterprises in its different sectors and to analyse their impact. The output of the thesis will be a model for improving the performance of DSP based on a comprehensive analysis of the determinants of performance.

<p>doc. Ing. Andrea Janáková Sujová, PhD.</p>	<p style="text-align: center;">Modelling and management of agile processes in WPI companies in the context of sustainable performance</p> <p>The thesis focuses on the analysis of the latest knowledge in the field of process agility as a modern approach to process performance improvement in theory and in practical conditions of wood processing enterprises. The aim of the thesis is to propose the implementation of agile principles into process management, as well as a comprehensive model for ensuring a sustainable level of performance of agile processes with respect to the specifics of wood products production.</p>
<p>doc. Ing. Hubert Paluš, PhD.</p>	<p style="text-align: center;">Determinants of Foreign Trade in Wood and Wood Products in the Slovak Republic</p> <p>Foreign trade is one of the ways in which the country's national economy is involved in the international division of labour. The extent of the country's involvement in the international division of labour and foreign trade depends on the size of the domestic market, production opportunities, the country's natural wealth, its geographical location, political situation, etc. Due to the availability of the domestic wood resources, the enterprises in the forestry and forest based industries are largely oriented towards supplying products only for the domestic but also for the foreign market. The share of exports in domestic production of wood and wood products varies depending on the size and structure of processing capacities and the demand for final products. In the Slovak Republic, 20-30% of the volume of harvested roundwood is exported annually, and in some sectors, such as the pulp and paper industry a share of exports is up to 90%. Other sectors, on the other hand, are partly dependent on imports of inputs. The aim of the dissertation is to determine the determinants of Slovakia's foreign trade in wood and wood products. To meet this objective it is necessary to elaborate a comprehensive analysis of the recent development and current state of the commodity and territorial structure of foreign trade, model the degree of substitution between products and between categories of foreign trade, develop a gravity model of foreign trade and quantify comparative advantages of Slovak trade (RCA index).</p>
<p>doc. Ing. Hubert Paluš, PhD.</p>	<p style="text-align: center;">Application of emotional marketing methods for enhancing the wood products sales strategies</p> <p>Wood is described and featured as a very emotional material, but the measurement of these emotions and the consequent application of these findings in marketing is only developed to a limited extent. The renewable material wood offers possibilities to address all five human senses and therefore the opportunity to satisfy customer needs much better, if the perception of these stimuli is understood better. As the eyes and ears are addressed in all classical and digital communication activities, the approach of multisensual marketing in the context of wood needs practical and feasible methods to measure the haptic perception of surfaces as well as the smell perception of wooden odors. Staging these properties of wood and forest products enables the creation of unique selling propositions that directly address the emotions of customers beyond all technical properties. The aim of this thesis is the development of market research tools to measure the haptic perception of different wood surfaces and the judgement of wood odors to integrate these findings in branding and marketing strategies for wooden products.</p>

<p>doc. Ing. Hubert Paluš, PhD.</p>	<p style="text-align: center;">Sustainability Assessment of Wood Value Chains</p> <p>Sustainable development can be characterised as an intergenerational concept aimed at the continued satisfaction of human needs. It comprises the economic, environmental and social aspect. Within current production and consumption patterns, value chains are important causal links between human activity and environmental change. Therefore, it is necessary to differentiate between sustainable and non-sustainable development. Despite the fact that numerous indicators for sustainable forest management are available, little efforts have been made to integrate them into the value chains. Apart from the chain of custody certification there are no indicators available covering environmental, social and economic aspects for the entire value chain, i.e. further stages of processing and utilisation of timber including cascade use, recycling and final disposal. The main aim of the thesis is to propose a set of indicators for assessment of sustainability and their experimental verification in the value chains of wood processing and utilisation in SR. These indicators will be focused on the assessment of socio-economic driving forces, state and impacts on the environment and the feedback of environmental change on society. The theoretical concept of sustainability will be transformed into concrete measurable results and recommendations for decision makers in integrating sustainability aspects into company processes.</p>
<p>doc. Ing. Ján Parobek, PhD.</p>	<p style="text-align: center;">Comparative advantages of forest industry products</p> <p>The high share of inputs from renewable sources represents a significant competitive advantage for commodities of the wood base sector. The aim of the dissertation thesis is to analyse the competitiveness of the wood processing chain in terms of the use of renewable resources. Based on the analysis of the current state of the forest base industry in the Slovak Republic and its position on the EU markets, the research focuses on the issue at different levels against the background of the international and domestic market, based on the competitive advantage of wood-based commodities. The commodity competitiveness model focuses on three levels of the woodworking chain. The first basis is raw wood, followed by commodities of first-stage wood processing and final wood based commodities. The output of research consists of models of wood base sector competitiveness as well as models of competitive advantages of selected wood-based commodities.</p>
<p>doc. Ing. Marek Potkány, PhD.</p>	<p style="text-align: center;">Optimization of cost calculations based on the application of technological and organizational innovations in the production of windows to increase the efficiency of the company</p> <p>This dissertation thesis will be focused on identifying the potential of organizational and technological innovations in the production of wood-aluminium windows and subsequent optimization in the area of monitoring costs and creating calculations. The thesis topic proposal is based on a long-term analysis of costs in a specific company as well as their comparison in the construction and carpentry industry. The input data for the comparison will be realized through controlled interviews with managers of selected companies. Methodologically, the work will be based on the analysis of the current state of cost reporting and the identification of possible technological and organizational innovation challenges that will ensure sustainable improvement in production processes, possible savings creation subsequently quantified by the proposed modification of reporting and calculation techniques. After considering the specifics of individual operations, the applicability of the proposed measures will also be possible in other companies in the industry.</p>

<p>prof. Ing. Mariana Sedliačiková, PhD.</p>	<p style="text-align: center;">The influence of behavioral factors on the financial decision-making process in enterprises of wood-working and furniture industry</p> <p>Behavioral finance is a field or subdisciplinary of behavioral economy that examines people's real behavior and decision-making in the field of finance, including knowledge of psychology and sociology. The scientific goal of the dissertation is to propose a concept, the essence of which is to determine the key, systematically occurring errors in the financial decision-making process of managers in companies in the wood and furniture industry arising from the influence of the human factor, as a starting point before making wrong financial decisions. The mapping of the solved problem will be realized through guided interviews as well as the questioning method in the form of a questionnaire in the practice of Slovak woodworking and furniture companies. The dissertation thesis will have a corresponding scientific character, with the possibility of using its results on a practical level, at the level of enterprises and the state, from the view of support and sustainability of family businesses in woodworking and furniture industry in Slovakia.</p>
<p>prof. Ing. Mariana Sedliačiková, PhD.</p>	<p style="text-align: center;">Handmade business with special wood products</p> <p>Handmade business is something special, namely that the entrepreneur sells something he/she created with his own hands. Handmade products are finding more and more supporters, which is why handmade business is getting attention, in various industries. Special handmade products made of wood are also very popular, such as toys, wooden jewelry, kitchen utensils, musical instruments, decorative items, sports equipment, etc. The scientific goal of the dissertation is to propose a framework concept for a successful handmade business with special wood products, the essence of which will be identifying the product, defining branding, sales channels as well as specifying the legislative framework of the business itself. Mapping of the solved issue will be carried out through guided interviews as well as the survey method in the form of a questionnaire in practice with Slovak handmade entrepreneurs with special wood products. The dissertation thesis will have a corresponding scientific character, with the possibility of using its results on a practical level, at the level of handmade producers and the community as well as the state, from the point of view of the support and sustainability of this unique type of business.</p>
<p>Prof. Ing. Mariana Sedliačiková, PhD.</p>	<p style="text-align: center;">Barriers to establishing a family business in wood-processing industry</p> <p>Family businesses in Slovakia predominate mainly in traditional sectors, including the wood-processing industry. The scientific goals of the dissertation thesis is to identify external and internal barriers to the establishment of family businesses in the wood-processing industry in Slovakia and to propose options that will make it easier to start their business and will be a prerequisite for their sustainability. The mapping of the solved issue will be carried out by a questionnaire inquiry method through which starting, prosperous and failed wood-processing family businesses will be addressed. The dissertation thesis will have a corresponding scientific character, with the possibility of using its results on a practical level, at the level of enterprises and the state, from the point of view of support and sustainability of family enterprises in the wood-processing industry in Slovakia.</p>

<p>prof. Dr. Ing. Jaroslav Šálka</p>	<p style="text-align: center;">Transfer of scientific knowledge into practice in the conditions of Slovak forestry research institutions</p> <p>The technology transfer and transfer of scientific knowledge into practice is a key factor in sustainable economic growth and competitiveness. Slovak forestry scientific institutions provide advice to woodworking and forestry practice and play an important role in the field of natural resource management, ensuring the forest ecosystem services and the development of the bioeconomy. However, these institutions are different in their dominant orientation towards basic and applied research, institutional anchoring and role in the transfer of knowledge into practice. The dissertation will focus on the research and comparison of used and favourite forms of transfer of knowledge into practice, supporting and inhibiting factors within research institutions, as well as the determination of preferences in economic and social practice. Methodologically, the work will be based (1) on the evaluation of questionnaire surveys of research employees and managers in economic and social practice and (2) on the evaluation of moderated discussion groups. The work will be based on the research that was carried out in the conditions of TUZVO. As a final result, we expect the detection of inter-institutional differences and the proposal of fundamental measures and tools to improve the transfer of knowledge into practice, especially for specific scientific institutions.</p>
<p>doc. Ing. Rastislav Šulek, PhD.</p>	<p style="text-align: center;">Economic conditions of management of non-state forests within the Slovak protected areas</p> <p>Way of management of non-state forests is affected by both the internal economic efficiency of non-state forest enterprises as well as the external restrictions which are governed, except for the nature conditions, by the regulative state measures, characteristics of business environment, and principles accepted by the whole society. When non-state forests are located within the protected areas, their economic utilization is limited due to the nature protection. In Slovakia, 57 % of non-state forests are located within the protected areas – management of such forests is affected by a number of factors – the most important ones are economic possibilities of support of non-state forest owners, legal restrictions due to the nature protection, social and environmental preferences of the society. The thesis objective is to analyse economic environment of sustainable and effective management of private, common and municipal forests under specific economic conditions connected to the existence of protected areas in Slovakia.</p>