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FACULTY OF FORESTRY
UNIVERSITY OF BELGRADE



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University of Belgrade

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On behalf of the publisher:

Prof. Dr. Ratko Ristić, Dean

Editor-in-chief:

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Dragana Ilić, M.A.

Technical editor:

Dr. Nenad Ranković, Retired Full Professor

Translation into English:

Dr. Katarina Lazić, Assistant prof.

Dragana Ilić, M.A.

Design and text assembly:

Petar Stošić, Graduate designer

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Faculty of Forestry,
University of Belgrade



100th
ANNIVERSARY
OF THE UNIVERSITY
OF BELGRADE
FACULTY OF
FORESTRY

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Instead of an introduction

As it happens, we belong to the generation that has the privilege and honor of celebrating the 100th Anniversary of the University of Belgrade - Faculty of Forestry.

Keeping in mind the events from the past decades, we tend to remember, and we are proud and happy to bear in mind all those people who have built up our Faculty, with their enthusiasm, dedicated work and diligence, and all those who, after graduating from the Faculty, represented their profession with dignity and wisdom.

For an entire century, by spreading the knowledge of the importance of forests, we have been educating professionals who are concerned with the numerous, valuable functions of the most complex terrestrial ecosystems.

As far back as in the mid-19th century, speaking of forests Josif Pančić wrote:

"We extract most of materials for our homes, furniture, tools and appliances from them. The other benefit is that they clean our air. Who does not know the pleasant feeling that overwhelms us, when on a hot day we enter the forest, our chest starts expanding, our mind is cleared, and a new force starts flowing down our tired body, so that after a short break we get back to the state that we can continue with our journey and activities?... Forests retain the force of winds,... guard us against floods,... mitigate heat and piercing cold... The distribution of moisture on the ground depends on them. Our Serbia is getting warmer as more forests are deforested... In the dense shade of forests, water collects into springs, streams and rivers... The first ideas on the liberation of Serbs were conceived in the forest... The Sun of today's freedom of Serbs broke through from the forest. However, even if I had not listed all the above benefits of the forest, in every Serb's heart it should boost the feeling of utmost gratitude to the ancestors who had preserved the forests and thus put the nation in a position to be saved from the ruin that seemed so inevitable just over half a century ago. These memories should also remind us that we too are obliged to preserve our forests for our descendants".

In 2020, remaining dedicated to the field which benefits our people and the state, and being aware of the responsibility and all the challenges and warnings, as well as of the expectations of the wider community outside the circles of our profession and science, we now move on with our work.

Уместо увода

Стицајем околности припадамо генерацији која има ту привилегију и част да обележи 100 година постојања и рада Шумарског факултета Универзитета у Београду.

Сећајући се догађања у протеклом времену, памтимо, поносимо се и радо сећамо свих оних који су својим ентузијазмом, посвећеним радом и марљивошћу стварали наш Факултет. Свих оних, који су по завршетку Факултета достојанствено и мудро представљали једну струку.

Кроз спознају о значају шума, читав век школујемо стручњаке који се баве бројним, драгоценим функцијама ових најсложенијих копнених екосистема.

Говорећи о шумама, још је Јосиф Панчић средином 19. века написао:

„Из њих вадино већину грађе за наше домове, по-кућанство, алате и напаве. Друја је користи шито нам чисти ваздух. Кома није познаито оно пријатно чувство, које нас обузима, кад на жарком дану у шуму ступимо, пруди нам се шире, лава се бистри, низ уморно шело ступи нека нова снага и по одмору од крајкој часа по-враћамо се ојет у стање, да можемо свој иути или своју радњу продужити... шуме задржавају силу ветрова,... чувају од поплава... умерavaju жеу и цичу... од њих зависи распоређивање воде на земљи. Наша Србија бива све појилја чим се више шуме крче... У јустиом хладу шума скуља се вода у изворе, пошоке и речице ... У шумама се зачеше прве мисли о ослобођењу Српства... из шуме прану данашњем Српству сунце данашње слободе. Пак, да ни у шита не бројим све друје, пређе споменути користи од шуме, она би једина свакоме Србину морала да улије у срце чувство највеће захвалности, шито су му стари шуме сачували и тиме ја у стање поставили, да се спа-се од пројаси, која се чињаше, пре мало више од пола века, неизбежљива. Ова усјомена ваљало би да нас и нашо погсеити, да смо и ми дужни да својим пошомцима шуме сачувамо“.

Сада, 2020. године, посвећени делатности од користи за наш народ и државу, свесни одговорности, свих изазова и опомена, као и очекивања шире заједнице од наше струке и науке, настављамо даље.

Вместо введения

Стечением обстоятельств мы принадлежим поколению, на долю которого выпала честь отпраздновать 100-летие со дня основания Факультета леса Белградского университета.

Оглядываясь на события истекшего периода, мы вспоминаем и гордимся теми, кто с энтузиазмом, усердностью и преданностью делу создавал наш Факультет. Помним всех тех, кто по окончании факультета с достоинством и умом представлял нашу профессию.

Осознавая значение леса, мы уже целое столетие обучаем специалистов, изучающих многочисленные функции этих наиболее сложных экосистем суши.

Еще Иосиф Панчич, говоря о лесах, записал в середине XIX столетия:

«Из них берем большинство строительных материалов для наших домов, утвари, инструментов, орудий. Вторая польза - это то, что они нам очищают воздух. Кто не знает приятно чувства, которое овладевает нами, когда в жаркий день сидим мы в лесу: труд наполняется, в полове проясняется, сквозь уставшее тело струится какая-то новая сила и после нескольких минут отдыха мы снова возвращаемся в состояние, позволяющее продолжить наш путь или занятия... Леса задерживают силу ветров... оберегают от наводнений... смягчают жару и мороз... от них зависит распространение влаги на земле. Климат в Сербии становится все шлейее, чем больше рубят леса... В густой тени лесов накапливается вода в источниках, ручейках и речках... В лесах возникали первые мысли об освобождении сербского рода... из леса встало солнце сегодняшней свободы для сербского рода. Если бы я не уюмянул даже ни одной из вышеназванных качеств леса, сам по себе он должен в сердце каждого серба вселить чувство величайшей благодарности за то, что его предки сохранили леса и тем самым дали возможность спастись от уничтожения, которое, как казалось всего полвека назад, было неминуемым. Эти воспоминания должны напомнить нам, что мы также должны сохранить леса для наших потомков».

В 2020 году посвященные профессии на пользу нашего народа и государства, осознавая всю нашу ответственность и вызовы со стороны природы, а также ожидания общества от лесоводческой науки, мы продолжаем нашу работу.

Anstelle einer Einführung

Das Zusammentreffen verschiedener Umstände hat bestimmt, dass wir der Generation angehören, die das Privileg hat, 100. Jahre der Bestehung und der Arbeit der Forstwissenschaftlichen Fakultät der Universität in Belgrad, Ehre zu erweisen.

Auf die vergangene Zeit rückblickend, wir erinnern uns, wir sind stolz und wir denken gerne an all diejenigen, die mit ihrem Enthusiasmus, gewidmeter Arbeit und Fleiß, unsere Fakultät gestaltet haben. An all diejenigen, die nach der Beendigung der Fakultät mit Würde und Weisheit ein Fach vertreten haben.

Durch die Erkenntnis von Bedeutung der Wälder, ein ganzes Jahrhundert bilden wir Fachleute aus, die sich mit zahlreichen und wertvollen Funktionen dieser vielfältigen Landökosysteme beschäftigen.

Über die Wälder sprechend, hat Josif Pančić bereits in der zweiten Hälfte des 19. Jahrhunderts, geschrieben:

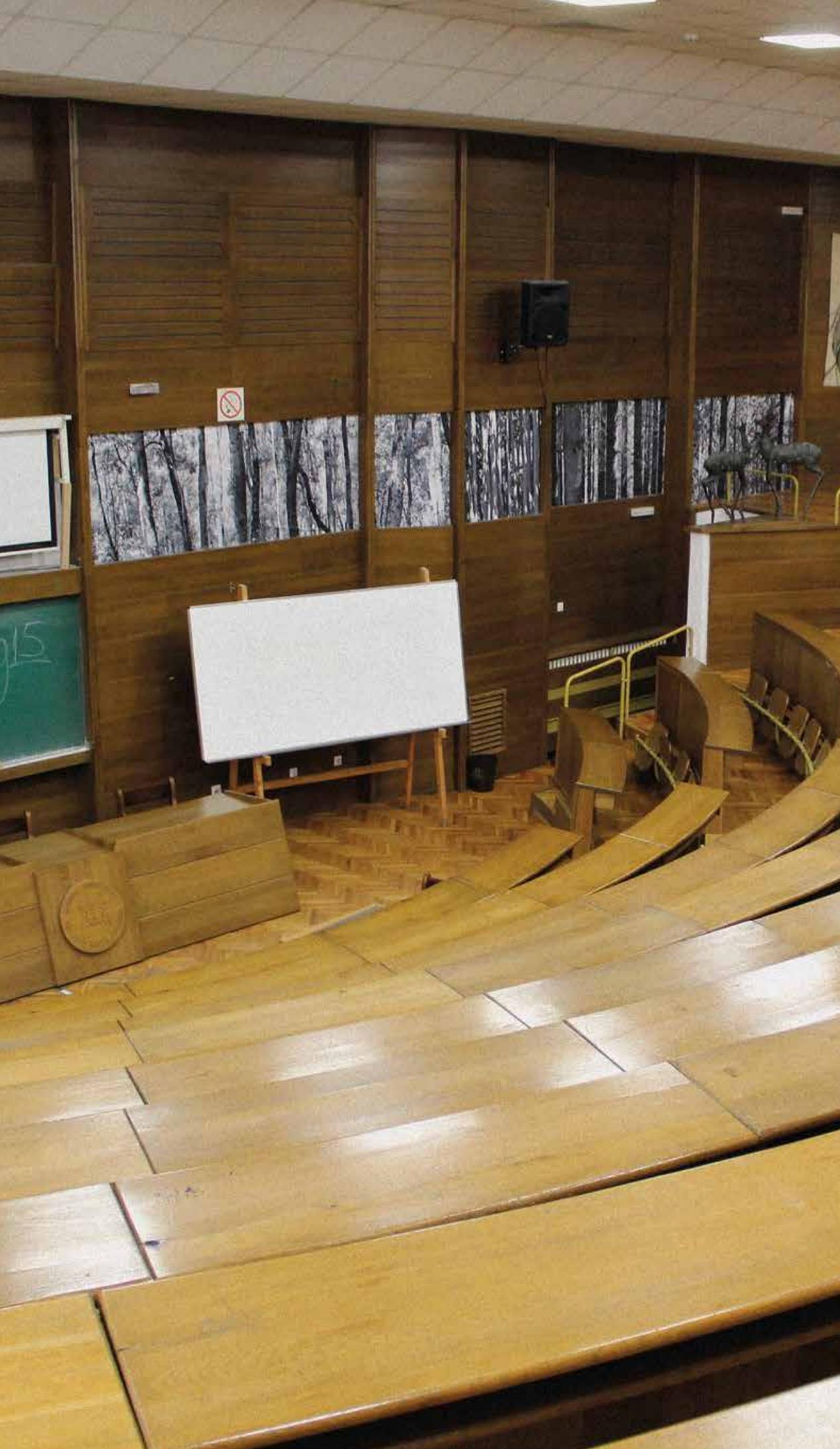
„Aus ihnen nehmen wir das meiste Baumaterial für unsere Heime, Hauseinrichtung, Werkzeuge und Vorrichtungen. Zweiter Nutzen ist, sie säubern unsere Luft.

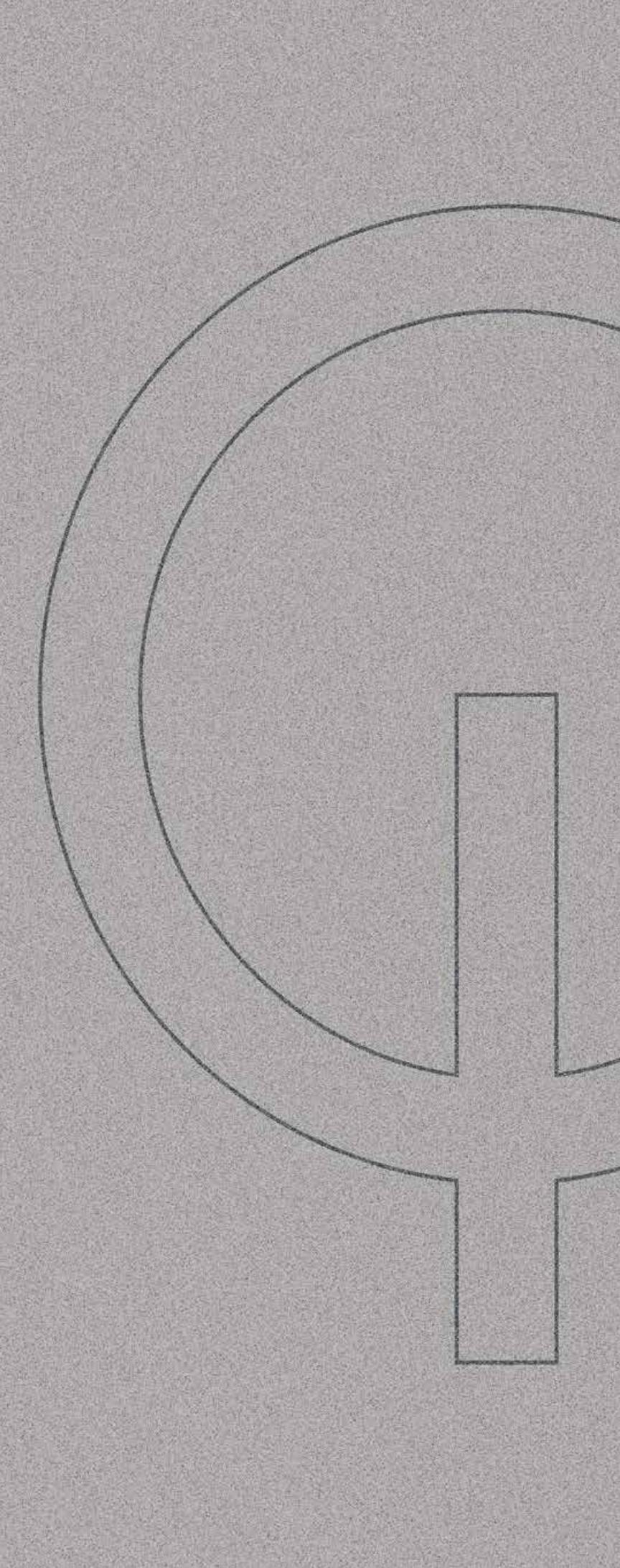
Wer kennt nicht das angenehme Gefühl das uns erfasst, wenn wir am glühenden Tag den Wald betreten, unsere Brust erbreitet sich, der Kopf klärt sich, entlang des müden Körpers strömt eine neue Kraft und nach der Erholung von kurzem Moment, kehren wir wieder in den Zustand zurück, dass wir unseren Weg oder unser Handeln fortsetzen können... Wälder halen die Gewalt der Winde auf,... beschützen von Überschwemmungen... mildern die Hitze und die Kälte... von ihnen hängt die Verteilung der Feuchtigkeit auf der Erde. Unser Serbien wird immer wärmer, je mehr man die Wälder rodet... Im dichten Waldschatten sammelt sich das Wasser in den Quellen, Bächern und kleinen Flüssen... In den Wäldern wurden die ersten Gedanken über die Befreiung des Serbentums geschöpft... aus dem Wald brach dem heutigen Serbentum die Sonne der heutigen Freiheit auf. Auch ohne alle weiteren Nutzen des Waldes aufzuzählen, außer den davor genannten, er müsste jedem Serben das Gefühl der größten Dankbarkeit ins Herz einflößen, dass ihm die Älteren die Wälder bewahrt haben und ihn somit in Zustand gebracht haben, sich vom Unheil, der getan wurde zu retten, vor etwa halbem Jahrhundert, unvermeidbar.

Diese Erinnerung würde sich eignen, uns auch daran zu beherzigen, dass auch wir verpflichtet sind, unseren Nachkommen die Wälder zu bewahren“.

Im Jahr 2020, einer Tätigkeit gewidmet die unserem Volk und dem Staat dient, bewusst der Verantwortung, aller Herausforderungen und Ermahnungen, sowie Erwartungen der breiteren Gemeinde als der Forstwissenschaft und ihrem Fach, fahren wir fort.







ABOUT THE FACULTY

Foreword from the Dean



The Faculty of Forestry of the University of Belgrade is a higher education and scientific research institution, with a hundred-years-long tradition, which we share with the fraternal Faculty of Agriculture. Back in 1920, the first first lecture in the field of forestry was given at the Faculty of Agriculture and Forestry in Zemun. We moved into the currently used building in 1954, when independent activity started at the Faculty of Forestry in the fields of education, research and the economy of the Republic of Serbia and the wider region.

Over the past decades of work, development and evolutionary change, the Faculty of Forestry has reached its current organisational form, whose dominant characteristic is the existence of four educational segments: the Department of Forestry, Department of Wood Science and Technology, Department of Landscape Architecture and Horticulture and Department of Ecological Engineering for Soil and Water Resources Protection. The above mentioned four departments produce different engineering profiles, covering a wide field of activity within the economic, research and institutional structures of the Republic of Serbia. So far, more than 10,000 students have graduated from the Faculty, and 435 Master of Science theses, 658 master's theses and 346 doctoral dissertations were drafted and defended.

The current social, economic and environmental conditions in Serbia and the region are influencing the formation of a new professional identity producing the need for top-notch engineers with theoretical, interdisciplinary knowledge and practical competencies in the fields of forestry, environmental protection, prevention of natural disasters and mitigation of the effects of climate change, which will be creative, innovative and ready to respond to new civilisational, environmental and technological challenges. An important part of the educational-research process is dedicated

to industrial activities in the field of furniture production and wood processing, which is inconceivable without the knowledge of sophisticated, innovative technological processes based on information technologies. These activities represent an important segment of industrial production in Serbia, with a clear prospect of further progress in the areas of digitisation of production plants and production of superbly designed and crafted pieces of furniture and other wood products.

One of the priorities is to keep working on the teaching reform process at all study levels in order to achieve better results, which should be visible through a higher student pass rate and reduced average length of studying until graduation, a wider range of acquired types of knowledge and skills required for professional engagement or scientific research. One of the priority tasks is further staff strengthening, primarily through the engagement of younger associates, the establishment of quality scientific research infrastructure and cooperation with prestigious institutions both from the country and from abroad. In addition, it is very important to raise the level of visibility and attractiveness of the Faculty of Forestry, both to students from Serbia and international students. The commitment to the process of permanent training is also shown by the staff, through the concept of so-called 'life-long learning', which is compatible with the need for a constant monitoring of changes in applied technologies, production processes and adaptation in altered environmental and social conditions.

Therefore, the emphasis is on practical competencies, which our students acquire through exercises in modern and well equipped laboratories, but also through professional practice in various companies. Students and teachers are a connected, integral part of the educational process at the

Faculty, the essential goal and starting point of the work being the creation of youth capable of engineering and scientific research. Students are involved in all activities related to the process of work and decision-making in the domains of the quality of teaching, modernisation of accredited study programmes, as well as study efficiency improvement. Students are introduced to various research activities, projects and programmes, in accordance with their interests and potentials, for the purpose of getting introduced to professional issues, encouraging creativity and innovation. One of the priorities in the work with students is the promotion of sports activities which make them reach a higher level of psycho-cognitive performance and physical fitness, by using all available capacities of the Faculty campus or sports terrains which are rented. In addition, the Faculty supports traditional sports events in which our students participate, voluntary actions (afforestation, coastal cleaning, educational environmental workshops for children, voluntary blood donation), as well as international competitions, where they achieve notable results (international and national projects, furniture and design fairs, international competitions).

The Faculty of Forestry of the University of Belgrade manages three large spatial units, the Goč Teaching Base (3,731 ha), the Majdanpečka Domena Teaching Base (2,078 ha) and the Arboretum on the Faculty campus (6.7 ha). The basic purpose of the teaching bases is reflected in the realisation of field/practical classes and scientific research activities. Thanks to its natural potentials, well built infrastructure and professional staff, the Goč Teaching Base meets all criteria to become a national and regional training centre in the field of forestry. The Faculty manages three protected natural areas, as an authorised guardian, and those are the Goč-Gvozdac Special Nature Reserve, the Felješana Strict Nature Reserve (15.28 ha) and the Arboretum of the Faculty of Forestry, which is a natural monument. We proudly speak of the activities that we do on a voluntary basis, such as horticultural therapy workshops for children with special needs in the Arboretum.

Every year on January 27, the University of Belgrade - Faculty of Forestry celebrates its 'Slava', Saint Sava's Day, remembering a spiritualist whose search for the truth led to the laying of solid, centuries-old foundations of the Serbian state and schooling systems. We are also proud of the period from 1997 to 2018, in which academician, Prof. Dr. Vladeta Jerotić, gave numerous lectures at the Faculty of Forestry, on the topic of human existence and the relationship between faith and human mental health. Those lectures of the great Serbian neuropsychiatrist, psychotherapist, philosopher and writer attracted many listeners, sometimes as many as eight hundred of them.

Today, the Faculty of Forestry is the most significant higher education and research institution in the field of forestry

in Serbia, and over the past decades it has given a significant contribution to the establishment and development of forestry faculties in the region, especially the Faculty of Forestry of the University in Banja Luka. Bilateral agreements signed with 33 faculties from abroad are a good basis for further development of international cooperation, which will also be contributed by the planned accreditation of a master's degree programme in English.

Since its founding, the Faculty has gone through different periods and experienced significant changes, always being tightly connected to the destiny of the Serbian people and state. Celebrating 100 years of work and existence, the entire staff of the Faculty of Forestry are ready to contribute to the development of our country and the University of Belgrade through quality work, solidarity and persistence.

Finally, on behalf of the teachers and associates, administrative, professional and support staff, we thank all institutions, organisations and individuals who supported activities designed to mark this great jubilee - 100th ANNIVERSARY OF THE UNIVERSITY OF BELGRADE - FACULTY OF FORESTRY.

Dean
Dr. Ratko Ristic, Full Professor

Brief history

The first attempt to create educated staff in the field of forestry dates back to the reign of Aleksandar Karađorđević. The school he founded in 1849, for the purpose of educating (training) guard staff, did not give the expected results, and it was soon abolished.

At the closing of the first exhibition of earth products in 1870, Josif Pančić gave a lecture entitled *Something about our forests, where he advocated for the opening of a forestry school: "As a careful observer of all that grows on Serbian ground, as an old traveller in all parts of our beautiful principality, more than many others I have had opportunities to get acquainted with the state of our forests, witness the changes that have taken place in them over the last quarter of the century, record the mistakes that have been made, some out of ignorance, some out of negligence, and I was able to get an idea of the way to preserve our forests or identify where they need to be improved"*.

The first secondary agricultural and forestry school was opened in Požarevac in 1872. The school operated for 10 years, and after that it was closed. The lack of educated forestry staff came along with the closure of this school, and there were attempts to solve this by bringing foreigners over, usually Germans and Hungarians. However, after a short stay in Serbia the experts would give up their jobs. The next step in creating educated forestry staff in Serbia was sending chosen young people who have graduated from high school for schooling to France, Germany and Austria. According to historical notes from the early twentieth century, at that time the educated foresters were:

- Aleksa Stojković (1833–1903) from Kragujevac, who graduated from the Forest Academy in Taranto (Germany) in 1859;

Text drawn up by:

Dr. Milan Medarević, Full Professor

- Jevrem Novaković (1845–1908) who with the recommendation from his famous professor Judeich went from Taranto to Zurich Polytechnic, and from there to Nancy, where he completed his studies in 1874. In 1891, he prepared the first Draft Forest Law for the National Assembly of Serbia;
- Kosta Đorđević (1848–1900) from Kraljevo who wrote the monograph "Forests of the Kingdom of Serbia"
- Jevđenije J. Marinković (1876–1910), a district forester in Donji Milanovac, who graduated from the Forest Academy in Taranto (Germany);
- Upon completion of two years at the Faculty of Law, Vladeta D. Popović (1879–1912) was elected state cadet for forestry. He graduated from the Forestry school in Nancy (France);
- Alexander P. Spirić (1879–1913) who graduated from the Forestry Academy in Taranto (Germany);
- Đorđe Ćuković (1868–1913) who studied forestry in Křiževci and Bjela (Weisswasser) in Czechoslovakia;
- Dimitrije Mihailović (1885–1915) who graduated from the Forestry Academy in Taranto (Germany);
- Pavle Barišić (1848–1909) who spent his career in the Petrovaradin Municipality, as a forester in Klenak from 1875 to 1885, and later on until 1900 in Sremska Mitrovica. Jovan Metlaš once said the following about Barišić: *"It is an interesting, and probably quite a unique case, that a man, so to speak without a formal schooling reaches such a high level of education..."*;
- Jakov Marković (1854–1916) who graduated from the Agricultural forestry school in Požarevac. Thanks to his persistence and consistency forest administrations were formed in 1899;
- Đoka Jovanović who graduated from the Faculty of Forestry in 1900 in Tübingen (Germany), where he also earned his doctoral title;

- Jovan Gačić (1875–1956) who graduated from the Department of Forestry of the Technical College in Karlsruhe (Germany) in 1900;
- Milan Marinović (1887–1951) who graduated from forestry in Banjska Ščavnica (Slovakia) in 1910.

The development of educated staff improved and strengthened the forestry profession. The first Serbian agricultural association was founded in 1869, and this association published the *Težak* journal, in which articles related to forestry were regularly published. It can be said that this association represented pure forestry in its work, and that the body of this association, was also the body of foresters.

The first meeting of foresters was held in 1899. The meeting was devoted to the consideration of the issue of forest administrations in accordance with the 1891 Forest Law. In May 1905, the second assembly of Serbian foresters was held, at which a conclusion was brought on the establishment of a Specialised Serbian Forest Association. At the initiative of Dr. Đoko Jovanović and Petar Manojlović, the director of the Forest Directorate in Čačak, the third assembly of foresters with the aim of founding the Forest Association in the Kingdom Serbia was convened in Kragujevac on March 11, 1907.

A forestry journal entitled *Forestry Bulletin* was launched in 1909. The first volume, as a double issue, was published in January of the same year. In addition to the editors, Dr. Jovanović, Bukovala and Ćirković, a significant contribution to the publication of the *Forestry Bulletin* were extensive articles on topics of concern at that time written by Jakov Marković, Jovan Jekić, Milan Jovanović, Milan Marković, Vladeta Popović, Dr. Milivoje Vasić and many others. Due to the military service of most members, the work of the Association and publishing of the *Forestry Bulletin* was suspended during World War I.

After the liberation of Serbia in 1918, an interim management of the Association was constituted with the task of providing new organisation of the Association, as a unique association in the newly formed state, as well as to resume issuance of the *Forestry Bulletin* with Dr. Đoko Jovanović as the editor-in-chief. The work of the Association took place in two directions: annual assemblies and publication of the *Forestry Bulletin*.

The first faculty where forestry studies started is the Faculty of Agriculture. The basis for the establishment of the Faculty of Agriculture was the Law on Amendments to the Law on University, dated 27 February, 1905. In Article 1, the Great School in Belgrade was proclaimed university, while Article 4 was amended as follows: "The University has five faculties, i.e. the faculties of philosophy, law, technics, medicine and theology". Two years later, a formal decision was adopted on the introduction of agricultural sciences to the University of Belgrade. Nevertheless, the establishment of a faculty did not happen before the end of World War I, that is until 1919 when

the Faculty of Agriculture with two departments, agriculture and forestry, started work in Zemun.

Preparations for the establishment and start of work of the Faculty of Agriculture were implemented by a commission consisting of: Dr. Jovan Cvijić, Dr. Živojin Đorđević and Dr. Bogdan Gavrilović, whose proposal was the basis for the University Council to elect three full professors, one associate professor and three part-time professors for the Council of the Faculty of Agriculture on May 19th, 1920. Among the members of the Council was Dr. Petar Đorđević, Head of the Ministry of Forestry and Mining and the first Dean of the Faculty of Agriculture.

Classes at this Faculty began on December 5, 1920. Out of a total of 45 students enrolled in the Faculty, 9 students were enrolled in the first generation of the Forestry Department.

Classes took place in Belgrade at several locations, because the technical capacities of the Faculty of Agriculture were insufficient. The office of the dean of the faculty was located in 18 Garašaninova Street (later Svetozara Markovića Street), which today houses the premises of the University of Belgrade related to student standards. Part of the classes were given at this location. Classes in general subjects were held at the address 1 Studentski trg Street (the current building of the Rectorate) and in the building of today's Faculties of Sciences. Forestry students attended part of the general subjects together with their colleagues from the Faculty of Philosophy, Engineering and Medicine. Professional subjects were taught in buildings located in Birčaninova, Dobračina and Krunska streets, in modest conditions.

The first professors elected for the Forestry Department were: Dr. Đoka Jovanović for the course of Forest Utilisation (Exploitation); for courses Forest Establishment and Silviculture, Hunting, Construction of Roads and Bridges eng. Milan Mužinić; for courses Forest Management and Calculation of Forest Values, contractual full professor eng. Aleksije Šenšin; for the subjects Forest Law and History of Forestry eng. Vojko Koprivnik and for the course Torrent Control, and later also for the subject Dendrometry, eng. Ljubivoje Maletić. The rest of the courses which were mostly general were covered by professors from other faculties and part-time teachers:

- Mathematics - Dr. Anton Bilimović, Faculty of Philosophy;
- Experimental Physics – Dr. Milorad Popović, Faculty of Philosophy;
- Inorganic and Organic Chemistry - Dr. Milivoje Lozanić, Faculty of Philosophy;
- Zoology - Dr. Živojin Đorđević, Faculty of Philosophy;
- Geology and Mineralogy with Petrography - Dr. Jovan Žujović, Faculty of Philosophy;
- Descriptive Geometry - Architect Vojin Petrović, Mortgage bank;
- Geodesy - Engineer Stanoje Nedeljković, Director General of the Cadastre;

- National Economy with Finance - Dr. Milorad Nedeljković, Director General of the Postal Savings Bank;
- Meteorology with Climatology - Jelenko Mihajlović, Director of the Astronomical Observatory;
- Construction - Architect Branislav Kojić, Faculty of Engineering;
- General Fundamentals of Law and Forestry Legislation - Dr. Vojko Koprivnik, Ministry of Forests and Mines;
- Fishing Industry with Legislation - Dr. Siniša Stanković, Faculty of Philosophy

With the First Decree of the Faculty of Agriculture (Official newspaper no. 115 of 25 May, 1921) goals and individual organisational solutions of great importance for Forestry were defined. For example:

- **Article 1** The task of the Faculty of Agriculture is to work on agricultural and forestry sciences, to study natural, economic and social opportunities of our country, and apply scientific results to our economy, as well as to theoretically and practically educate farmers and foresters of all branches;
- **Article 2** The Faculty of Agriculture is divided into two departments: the Department of Agriculture and the Department of Forestry;
- **Article 5** defines three groups of courses: basic (9), professional (23) and ancillary (5), a total of 37 courses, out of which, 19 courses are still relevant today;
- **Article 7** The Faculty of Agriculture is divided into 10 institutes, of which 4 are linked to the Forestry Department;
- **Article 9** Some of the existing nurseries and forest complexes will be appointed for scientific and practical research.

In the next Decree of the Faculty of Agriculture of 21 September, 1924, the list of courses was slightly changed. During the validity of this decree (1924–1932) a total of 196 students graduated from the Faculty, many of whom were refugees from Russia.

Article 4 of the Law on Universities of June 28, 1930 stated that the University of Belgrade had 6 faculties, including the Faculty of Agriculture and Forestry. Here, the term 'Forestry' was for the first time mentioned in addition to Agriculture. Chapter 5 of the 1930 Forest Law, dedicates 9 articles (Art. 113 to Art. 121) to forestry teaching and education. Some of those articles are listed here:

- **Article 113** For a more complete professional education of forest professionals the Ministry of Forests and Mines will help the Faculty of Agriculture and Forest Management. The Ministry will direct that assistance towards: cash grants, secured in the budget of the Ministry of Forests and Mines, and by making state forest facilities available for the purpose of science and teaching.

- **Article 114** The Ministry will provide assistance to institutes established within the framework of the Faculties of Agriculture and Forestry in Belgrade and Zagreb to help the development of forest science in general, and suggests research of issues that are of special and current importance for forest management.
- **Article 116** As needed, the Ministry of Forestry and Mines will open schools and organize separate permanent and temporary courses to expand the theoretical and practical education of forest professionals and forest guards.
- **Article 118** People will be introduced to the field of forestry through lectures, courses, popular publications, best practice examples of crops and plants. The rationale of this article suggests that words and deeds are necessary to awaken latent love of the forest in our people.
- **Article 119** In relation to Article 52, the Law on Public Schools from 1929 suggests the necessity of learning about the forest already in elementary school,
- **Article 121** Subjects with historical, scientific and artistic value, natural beauty and rarity, which are found in the forest shall be preserved and maintained.

This served as the basis for the 1932 Decree of the Faculty of Agriculture and Forestry, which explained in detail the work of 18 scientific institutes. The first four institutes had joint courses with the students of agriculture, while the last four included professional forestry subjects.

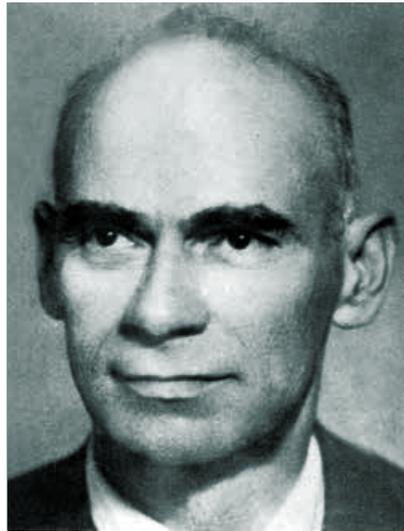
The institutes were:

- The Institute of Forest Management, Dendrometry and Forest Values Assessment;
- The Institute of Forest Utilisation with Mechanical Wood Processing;
- The Institute of Forest Establishment, Silviculture and Protection with Hunting;
- The Institute of Forest Policy, Forest Management with Accounting and Statistics and Trade in Forest Products.

According to the Decree of 30 May 1939, which refers to the Faculties of Agriculture and Forestry in Belgrade and Zagreb, there were 35 courses at the Department of Forestry, and the Faculty had 28 institutes, of which 13 were forestry institutes, and 5 cabinets. In the aim of better professional and practical work of the institutes, faculties had experimental estates.

According to the above Decree, the exams at the Faculty were of graduate and doctoral levels. Graduation exams were prepared as general-professional and final-professional exams. The final professional exam was taken in writing and orally in the subjects of Forest establishment and Silviculture, Forest Utilisation and Forest Management.

In 1959, Professor Dušan Simeunović wrote: *“Since the archive was burned down, there is no data on the total number of enrolled and graduate forestry students in the period between*



1 The first dean of the Faculty of Forestry Sreten Rosić, engineer (1895–1968)

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the two wars. The existing data speak in favour of the fact that in the period between the academic year 1923/24 and 1932/33 the number of graduate forest engineers was 163, and that in 1932/33, 452 students were enrolled in the Forestry Department, in all four years. In the period from 16 October, 1933 to 4 April, 1944 the number of graduate forest engineers was 799”.

In 1932, the Faculty of Agriculture and Forestry moved into a new building in Zemun. At the time of the outbreak of war the forestry department had four full professors, two associate professors, one assistant professor and eight teaching assistants. The department consisted of twelve institutes, with modest research equipment and a number of collections, while laboratories and libraries were shared with the Department of Agriculture. In the first year of the war, all the inventory from Zemun was moved to Belgrade and stored in the building of the Faculty of Philosophy (today the Faculty of Sciences and Mathematics). In 1944, during the war the entire inventory (teaching aids, collections, and library) and all documents of the Forestry Department were burned down. The teaching staff of the Forestry Department was significantly reduced during World War II.

After World War II, the Faculty of Agriculture and Forestry started work on 5 October, 1945, and only five teaching assistants came back to work. Therefore, at the first session held on 5 October, 1945, the Faculty Council decided to announce job vacancy contests for teachers and assistants of fourteen subjects. During the school year 1945/46, two associate professors were elected, one assistant professor, six permanent part-time teachers, four part-time teachers per hour and three teaching assistants. Great effort was made by the teaching staff to provide textbooks and literature. The textbooks written for 34 courses of the Forestry Department were 6 permanent and 8 temporary textbooks, 8 course packets, lectures were

copied for 5 courses, while textbooks from other faculties were used for another 5 courses. Textbooks were missing for only 2 subjects.

The Faculty of Forestry in Belgrade became independent on February 5, 1949 by the Decree of the Government of the People’s Republic of Serbia no. 39 (Official Gazette of PRS no. 6/49). It was the first independent Faculty of Forestry out of a total of 5 Faculties of Agriculture and Forestry in Yugoslavia. It was entered in the court register of the District Commercial Court in Belgrade by decision Fi-1363/88. The first dean of the Faculty of Forestry was prof. Sreten Rosić, engineer (1895–1968).

By the decision of the People’s Committee of Belgrade of April 2, **1953**, the Faculty of Forestry was given the building in 1 Kneza Višeslava Street in Banovo Brdo, where the Faculty moved in the autumn of 1954.

The number of teaching and support staff increased every year. So, in the academic year 1956/57, there were four full professors, 13 associate professors, eight assistant professors, six part-time teachers, four lecturers, 22 teaching assistants, four engineers as trainee assistants, seven part-time assistants, four foreign language teachers and 26 laboratory technicians.

At the renovated Forestry Department, as noted by prof. Simeunović, classes started according to the pre-war curriculum and system of studying. The post-war social and economic changes also affected forest economy. Realistic opportunities were created for the modernisation of our forestry and for its faster economic development. That is why the professional circles asked whether the bearers of these changes could be forest engineers, whose encyclopedic knowledge encompasses two differentiated industries, forestry and timber industry, or professionals who sovereignly master the knowledge of modern biology and technology? According to the assessment at the time, the main fighters against the biological and technical



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backwardness of our forestry, including wood industry, could only be professionals from the second group.

At first, the teaching differentiation between forestry and timber industry was very difficult to resolve, i.e. that was practically impossible. The main obstacle was the lack of teaching staff, especially for the part concerned with wood industry. In addition, a formal obstacle was that the Forestry Department was only a department within the Faculty of Agriculture and Forestry, so the establishment of a new department had to be evaluated in that context. Because of that, an incomplete and temporary solution was found. The Forestry Department was divided into two so-called specialties (groups): the silvicultural group and the forest-industrial group.

The difference between the groups was supposed to be only in some specific types of knowledge, and in both cases the student who graduated would receive the title forest engineer. However, since the shortcomings of this differentiation were observed, a decision was brought to reintroduce the unified curriculum, without division into groups. In the academic year 1952/53 a new curriculum was introduced that lasted nine, i.e. ten semesters.

The first, 1956 Statute of the Faculty of Forestry, which was adopted at the initiative of the dean Prof. Milutin Knežević and Prof. Dušan Oreščanin, established the Wood-Industrial Department in addition to the Forestry Department. The first generation of students in the Wood-Industrial Department was enrolled in 1956/57. Upon the completion of studies and graduation paper defense students of the Faculty received the academic title Forest engineer, i.e. Wood industry engineer.

In addition to the regular classes in the post-war period, postgraduate studies were also introduced. Until the beginning of teaching in the academic year 1957/58, 22 candidates completed

postgraduate studies, 15 students earned their doctoral degrees, and five completed their specialisations.

According to the curriculum from October 1960, the Faculty of Forestry in Belgrade had 5 departments: the Forestry Department, the Department of Mechanical Wood Processing, the Department of Chemical Wood Processing, the Department of Residential Greening and the Department of Soil Amelioration.

It soon became apparent that the issues of chemical wood processing were also studied at other faculties of the University in Belgrade, so the decision was made to move this department to the Faculty of Technology and Metallurgy.

In the coming period, the Faculty of Forestry changed dynamically in organisational terms in accordance with the socio-economic occasions:

- In 1966, the Faculty consisted of 4 departments: the Department of Forestry, the Department of Wood Industry, the Department of Horticulture and the Department of Erosion and Soil Amelioration;
- In 1973, the departments of the Faculty became self-governing institutes: the Institute of Forestry, the Institute of Wood Industry, the Institute of Landscape Architecture and the Institute of Water Management in Erodible Areas. The institutes joined into the Faculty of Forestry, as a working community. This form of organisation persisted until 1988;
- In 1988, the departments were reintroduced in organisational terms with partially changed names of the institutes: the Department of Forestry, the Department of Wood Processing, the Department of Landscape Architecture and the Department of Erosion Control;
- In 2002, three departments changed their names, and at that time the Faculty consisted of: the Department of Forestry, the Department of Wood Processing, the Department



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2, 3, 4 The new building where the Faculty of Forestry moved in 1954.

of Landscape Architecture and Horticulture and the Department of Erosion Control and Torrent Management;

- In 2006, the Department of Erosion Control and Torrent Management changed its name to the Department of Ecological Engineering for Soil and Water Resources Protection, while other Departments retained their names;
- In 2013, the Department of Wood Processing changed its name to the Department of Technologies, Management and Design of Furniture and Wood Products, which was changed to the Department of Wood Science and Technology in 2019;
- In 2020, the Faculty of Forestry consists of four departments: the Department of Forestry, the Department of Wood Science and Technology, the Department of Landscape Architecture and Horticulture and the Department of Ecological Engineering for Soil and Water Resources Protection.

In 2006, under the influence of modern global changes and demands in higher education, the University of Belgrade introduced the Bologna Process, as a modern system that relies on a greater degree of flexibility, the need for complementarity and harmonisation with faculties in the same field and of a similar profile, a greater degree of student engagement during course teaching, and studies as a process: undergraduate academic studies, master's degree studies and doctoral studies. At the same time, the competence of the Faculty is provided through the accreditation of study programmes and curricula, and the basic accreditation criteria are staff structure, material equipment and sufficient working space. The first Bologna system generation of students was enrolled in the Faculty in the academic year 2006/07, and the Faculty received its first certificate of accreditation as a higher education institution in 2008. Studies are organised at 3 levels: undergraduate academic

studies (4 years), master's degree academic studies (1 year) and doctoral studies (3 years). The 4 + 1 + 3 system of study has been retained to this day.

Based on more than a decade-long experience, it is also necessary to give a critical review of the Bologna Process. With the necessary caution, it could be stated that the accreditation process and the process of education itself are extremely burdened with bureaucratic procedures. Bologna, a new way of schooling and learning for us, was adopted too quickly, without the necessary comprehensive and lengthy preparations, and without analysing the experience and results from countries where this way of studying was introduced much earlier. The whole process was a priori accepted and transposed, ignoring the national, social, political and economic peculiarities, while neglecting positive traditional values of the academic system of schooling.

The time to come brings along political, economic, environmental and consequently sociological challenges. Negative effects of climate change on forest ecosystems, national and global economy, and the qualitative and quantitative increase in the complexity of the demands of modern man towards the forest and the living environment require flexibility and innovation of the educational process at the Faculty of Forestry. This requires permanent professional improvement of the teaching staff to ensure the education of skilled professionals, able to face the problems of the profession in the 21st century.

Organisational structure

The Statute of the Faculty of April 2019 defines the organisational structure, the mode of operation, management and leadership of the Faculty, as well as the bodies of the Faculty.

FACULTY BODIES

The bodies of the Faculty are defined by the Statute, and they are the following:

- Governing body
- Managerial body
- Professional bodies;
- Student parliament.

GOVERNING BODY

The governing body of the Faculty is the Council. The Council has 27 members, of which 15 members are representatives of the Faculty, eight members are appointed by the Government and four members are elected by the Student Parliament of the Faculty. Out of the 15 Faculty representatives 13 members are elected by the department councils, and one member is elected from the non-teaching staff of the Faculty and the Centre for Teaching and Scientific Facilities (CTSF). The term of office of the members of the Council is four years, except for student representatives, whose term of office exceptionally lasts for two years.

Members of the Council of the Faculty of Forestry are:

- PRESIDENT OF THE COUNCIL: Dr. Branko Stajić, Associate Professor
- DEPUTY PRESIDENT OF THE COUNCIL: Dr. Zoran Nikić, Full Professor

The members of the Council are:

Representatives of the founder

- Igor Petrović, Master Forest Engineer
- Dr. Pavle Pavlović

Text drawn up by:

Dr. Branko Glavonjić, Full Professor

- Saša Radulović, Graduate Forest Engineer
- Branko Stefanović, Bachelor of Economics
- Dušan Jevđović, Graduate Forest Engineer
- Vesna Šabanović, Graduate Forest Engineer
- Dr. Zvonimir Baković
- Stefan Stanković, Graduate Culturologist

Representatives of the Department of Forestry

- Dr. Dragica Vilotić, Full Professor
- Dr. Branko Stajić, Associate Professor
- Dr. Slobodan Milanović, Associate Professor
- Dušan Stojnić, Master Forest Engineer, Teaching Assistant

Representatives of the Department of Wood Science and Technology

- Dr. Mladen Popović, Associate Professor
- Dr. Aleksandar Lovrić, Assistant Professor
- Dr. Tanja Palija, Assistant Professor

Representatives of the Department of Landscape Architecture and Horticulture

- Dr. Mirjana Ocokoljić, Full Professor
- Dr. Milka Glavendekić, Full Professor
- Dr. Nevena Vasiljević, Assistant Professor

Representatives of the Department of Ecological Engineering for Soil and Water Resources Protection

- Dr. Snezana Belanović-Simić, Full Professor
- Dr. Zoran Nikić, Full Professor
- Dr. Tijana Vulević, Assistant Professor

Representative of the teaching bases of the Faculty of Forestry

- Vladimir Puđa, Graduate Engineer

Representative of the organisational unit Professional services of the Faculty

- Zorica Stevanović, Bachelor of Law

Representatives of students of the Faculty of Forestry:

- Dušan Petković, budget-financed student of the third year of undergraduate studies at the Department of Forestry
- Biljana Zdravković, budget-financed student of the Department of Wood Science and Technology
- Jovan Ilić, budget-financed student of the fourth year of undergraduate studies at the Department of Landscape Architecture and Horticulture.
- Filip Pešić, budget-financed student of the Department of Ecological Engineering for Soil and Water Resources Protection.

MANAGERIAL BODY

The Dean is the main representative of the Faculty, its leader and the managerial authority. As of 1 October, 2018, the duty of the dean is entrusted to Prof. Dr. Ratko Ristic, Full Professor. The Dean is helped by four Vice-Deans, i.e. three Teacher Vice-Deans and one Student Vice-Dean. Vice-Deans from the rank of the teaching staff are: Dr. Vesna Golubović-Ćurguz, Associate Professor, Vice-Dean for Education, Prof. Dr. Zdravko Popović, Full Professor, Vice-Dean for Financial and Material Issues and Prof. Dr. Mirjana Šijačić, Full Professor, Vice-Dean for Research and International Cooperation. The Student Vice-Dean in the academic year 2019/2020 is Nikola Popović, a student of the Department of Wood Science and Technology.

PROFESSIONAL BODIES

The professional bodies of the Faculty are:

- The Teaching-Scientific Council;
- The Electoral Council;
- The Department Council;
- Support professional and advisory bodies;

- The Centre for International Cooperation;
- Student Parliament.

The Teaching-Scientific Council of the Faculty is the highest professional body of the Faculty that decides on teaching issues, scientific and professional activities of the Faculty, and performs other tasks defined by the Statute of the Faculty. It is composed of all teachers, teaching assistants, PhD teaching assistants and researchers (full-time employed), who are employed with at least 70% of their working time at the Faculty. When deciding on matters relating to the quality assurance of teaching, the reform of study programmes, the analysis of study efficiency and the determination of the number of ECTS credits (European Credit Transfer and Accumulation System), the membership of the Teaching-Scientific Council is expanded by 20% to include student representatives, elected by the Student Parliament of the Faculty. The Dean is the President of the Teaching-Scientific Council as part of his responsibilities.

In order to accomplish its tasks the Teaching-Scientific Faculty Council forms permanent commissions, namely: the Commission for Teaching, the Commission for Studies of the Second Level, the Commission for Studies of the Third Level of Studies, the Commission for Science and Cooperation, the Commission for Publishing, the Commission for Entrance Exams, the Commission for the Recognition of Exams, the Ethics Committee, the Commission for Monitoring and Improvement of the Quality of Teaching at the Faculty, the Commission for Quality Assurance and Improvement and the Commission for Student Disciplinary Responsibility. If necessary, the Teaching-Scientific Council may also form other occasional commissions.

The Electoral Council of the Faculty determines the proposals for the election to teacher titles, elects to the title of associate and performs other tasks defined by the Statute of

the Faculty. The Electoral Council of the Faculty consists of teachers, teaching assistants and PhD teaching assistants, who are employed with at least 70% of working time at the Faculty. The Dean is the president of the Electoral council as part of his responsibilities.

The Department Council is a professional body made up of teachers, teaching assistants and associates who teach and perform scientific research at a particular department. The Faculty has four Department Councils: the Council of the Forestry Department, the Council of the Department of Wood Science and Technology, the Council of the Department of Landscape Architecture and Horticulture and the Council of the Department of Ecological Engineering for Soil and Water Resources Protection. Department Council sessions are chaired by the President of the Department Council, elected from the rank of teachers at the proposal of Chairs.

Support professional and advisory bodies can also be formed at the Faculty, such as the Statutory Commission of the Faculty, Financial Commission and other bodies in accordance with the law, the Statute of the University and the Statute of the Faculty.

The Centre for International Cooperation is a professional body that performs the implementation of agreements of cooperation with other foreign higher education institutions, participates in the implementation of international projects of cooperation, takes care of the participation of the Faculty in international associations and performs other tasks in accordance with the Statute of the Faculty.

The Student Parliament of the Faculty is the body through which students exercise their rights and protect their interests at the Faculty. The Student Parliament of the Faculty is elected directly, by secret ballot from students enrolled in studies in the academic year in which the election is made. The President of the Student Parliament in the academic year 2019/2020 is Marija Milutinović, a budget-financed student of the Department of Landscape Architecture and Horticulture.

ORGANISATIONAL STRUCTURE OF THE FACULTY

The organisational structure of the Faculty of Forestry is defined by the Statute of the Faculty, and it consists of:

1. The Teaching-Scientific Organisational Unit, consisting of:

- The Chairs with associated laboratories and centres;
- The Departments;
- The Centre for Teaching and Scientific Facilities (CTSF).

2. The Scientific-Research Organisational Unit, consisting of:

- The Institutes;
- The Innovation Centre;
- The Certification Bodies.

3. Professional service

There are four departments at the Faculty within which teaching and scientific research activities are performed in the framework of individual professions, namely:

- The Department of Forestry;
- The Department of Wood Science and Technology;
- The Department of Landscape Architecture and Horticulture;
- The Department of Ecological Engineering for Soil and Water Resources Protection.

Each department contains a professional body that consists of the Department Council as well as a number of Chairs with the belonging courses and laboratories/centres. The distribution of courses by Chairs is determined by a decision of the Teaching-Scientific Council, at the proposal of the appropriate Chair and Department Council. The following section is an overview of the Chairs as the basic teaching-scientific organisational units within individual Departments.

DEPARTMENT OF FORESTRY

President of the Department Council: Dr. Olivera Košanin, Associate Professor

Deputy President of the Department Council:
Dr. Marko Perović, Associate Professor

- THE CHAIR OF SEED SCIENCE, NURSERY PRACTICE AND AFFORESTATION

Head of the Chair: Dr. Dragica Vilotić, Full Professor
Deputy Head of the Chair: Dr. Mirjana Šijačić-Nikolić, Full Professor

- THE CHAIR OF FOREST ECOLOGY

Head of the Chair: Dr. Olivera Košanin, Associate Professor
Deputy Head of the Chair: Dr. Milan Knezević, Full Professor

- THE CHAIR OF SILVICULTURE

Head of the Chair: Dr. Violeta Babić, Associate Professor
Deputy Head of the Chair: Dr. Milun Krstić, Full Professor

- THE CHAIR OF FOREST PROTECTION

Head of the Chair: Dr. Čedomir Marković, Full Professor
Deputy Head of the Chair: Dr. Slobodan Milanović, Associate Professor

- THE CHAIR OF FOREST RESOURCES UTILISATION

Head of the Chair: Dr. Milorad Danilović, Full Professor
Deputy Head of the Chair: Dr. Nenad Ćuprić, Associate Professor

- THE CHAIR OF FOREST MANAGEMENT PLANNING

Head of the Chair: Dr. Damjan Pantić, Full Professor
Deputy Head of the Chair: Dr. Branko Stajić, Associate Professor

- THE CHAIR OF BIOECONOMY, POLICY AND GOVERNANCE IN FORESTRY AND NATURE CONSERVATION

Head of the Chair: Dr. Dragan Nonić, Full Professor
Deputy Head of the Chair: Dr. Ljiljana Keča, Full Professor

DEPARTMENT OF WOOD SCIENCE AND TECHNOLOGY

President of the Department Council:

Dr. Nebojša Todorović, Associate Professor

Deputy President of the Department Council:

Dr. Igor Džinčić, Associate Professor

- THE CHAIR OF PRIMARY WOOD PROCESSING
Head of the Chair: Dr. Vladislav Zdravković, Associate Professor
Deputy Head of the Chair: Dr. Ranko Popadić, Associate Professor
- THE CHAIR OF CHEMICAL AND MECHANICAL WOOD PROCESSING
Head of the Chair: Dr. Milanka Điporović-Momčilović, Full Professor
Deputy Head of the Chair: Dr. Ivana Gavrilović-Grmuša, Associate Professor
- THE CHAIR OF MACHINES AND APPARATUSES IN WOOD PROCESSING
Head of the Chair: Dr. Mladen Furtula, Associate Professor
Deputy Head of the Chair: Dr. Srđan Svrzić, Assistant Professor
- THE CHAIR OF FINAL WOOD PROCESSING
Head of the Chair: Dr. Igor Džinčić, Associate Professor
Deputy Head of the Chair: Dr. Tanja Palija, Assistant Professor
- THE CHAIR OF WOOD INDUSTRY ORGANISATION AND ECONOMICS
Head of the Chair: Dr. Branko Glavonjić, Full Professor
Deputy Head of the Chair: Dr. Slavica Petrović, Assistant Professor
- THE CHAIR OF WOOD PROTECTION
Head of the Chair: Dr. Milenko Mirić, Full Professor

DEPARTMENT OF LANDSCAPE ARCHITECTURE AND HORTICULTURE

President of the Department Council:

Dr. Mirjana Ocokoljić, Full Professor

Deputy President of the Department Council:

Dr. Ivana Bjedov, Associate Professor

- THE CHAIR OF LANDSCAPE HORTICULTURE
Head of the Chair: Dr. Danijela Đunisijević-Bojović, Associate Professor
Deputy Head of the Chair: Dr. Dragana Skočajić, Assistant Professor
- THE CHAIR OF LANDSCAPE ENGINEERING
Head of the Chair: Dr. Nadežda Stojanović, Assistant Professor
Deputy Head of the Chair: Dr. Jovana Petrović, Assistant Professor
- THE CHAIR OF PLANNING AND DESIGN IN LANDSCAPE ARCHITECTURE
Head of the Chair: Dr. Nevena Vasiljević, Associate Professor
Deputy Head of the Chair: Dr. Biljana Jović, Assistant Professor

DEPARTMENT OF ECOLOGICAL ENGINEERING FOR SOIL AND WATER RESOURCES PROTECTION

President of the Department Council: Dr. Nada Dragović, Full Professor

Deputy President of the Department Council:

Dr. Snežana Belanović-Simić, Full Professor

- THE CHAIR OF AMELIORATIONS
Head of the Chair: Dr. Sara Lukić, Associate Professor
Deputy Head of the Chair: Dr. Snežana Belanović-Simić, Full Professor

- THE CHAIR OF EROSION AND TORRENT CONTROL
Head of the Chair: Dr. Miodrag Zlatić, Full Professor
Deputy Head of the Chair: Dr. Mirjana Todosijević, Associate Professor
- THE CHAIR OF EROSION CONTROL GEOTECHNICS
Head of the Chair: Dr. Zoran Nikić, Full Professor
Deputy Head of the Chair: Dr. Grozdana Gajić, Full Professor

THE CHAIR OF GENERAL SUBJECTS

The Chair consists of the following subjects: Mathematics, Mathematics with Statistics, Statistics in the Analysis of Natural Resources and Foreign Languages. The courses which belong to this department are attended by all four departments, and rights of employees of the Chair are exercised through the competences of the Electoral Council and the Teaching-Scientific Council.

Head of the Chair: Dr. Slobodanka Mitrović, Full Professor

An integral part of the Teaching-Scientific Organisational Unit is also the Centre for Teaching and Scientific Facilities (CTSf), where classes, scientific research and experimental work of students, associates and teachers are organised and conducted at the Faculty. The CTSf integrates, organises and manages the work of:

- **Goč Teaching Base** (forests, forest nursery, sawmill, complex of facilities for providing catering and accommodation services to students and pupils, fishpond, teaching-scientific and commercial premises);
- **Majdanpečka Domena Teaching Base** (forests, sawmill, facilities for providing catering and accommodation services to students and pupils).

Three protected natural areas are also part of the Faculty:

- Natural monument of the third category Arboretum of the Faculty of Forestry with the Nursery, at the Faculty campus;
- *Goč – Gvozdac*, *Goč – Kraljevo* Special Nature Reserve, within the Centre for Teaching and Scientific Facilities (CTSf);
- *Felješana* Strict Nature Reserve, Majdanpečka Domena, Majdanpek, within the CTSf.

The following entities are parts of the **Scientific-Research Organisational Unit**:

- Institutes;
- The Innovation Centre;
- Certification Bodies.

The Institutes consist of teachers, researchers and associates (researchers). The following activities are performed at the Institutes: planning, initiation and implementation of research and development projects, the proposal of scientific research programmes and projects and technology transfer.

There are four Institutes at the Faculty, and they are:

- THE INSTITUTE OF FORESTS AND FORESTRY
Head: Dr. Jovana Devetaković, Assistant Professor
- THE WOOD PROCESSING INSTITUTE
Head: Dr. Mlađan Popović, Associate Professor
- THE INSTITUTE OF LANDSCAPE ARCHITECTURE AND HORTICULTURE
Head: Dr. Milka Glavendekić, Full Professor
- THE INSTITUTE OF ECOLOGICAL ENGINEERING FOR SOIL AND WATER RESOURCES PROTECTION
Head: Mirjana Todosijević, Associate Professor

The Innovation Centre of the Faculty of Forestry was established for performing innovation activities at the Faculty in the aim of organising and conducting research and experimental

work in sciences and technological development, as well as the application and placement of innovations.

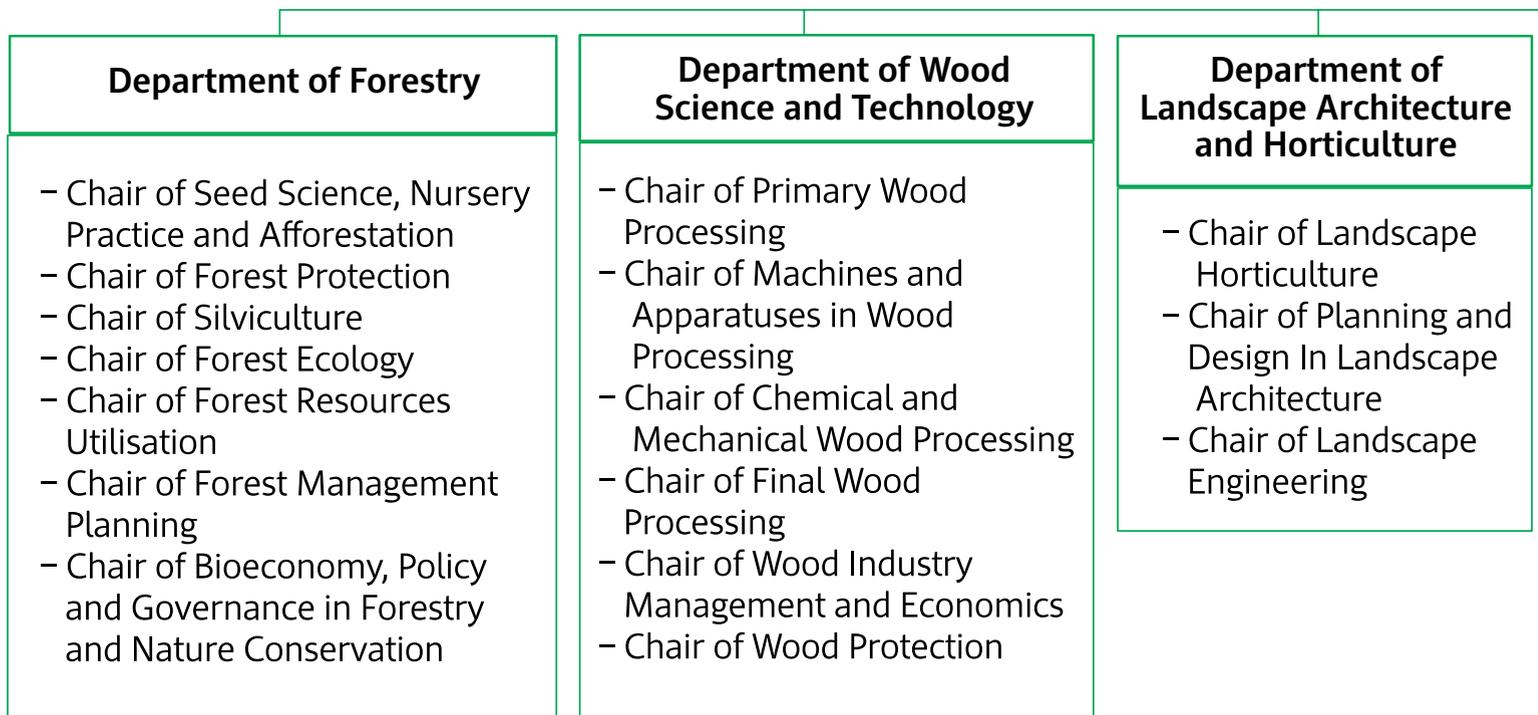
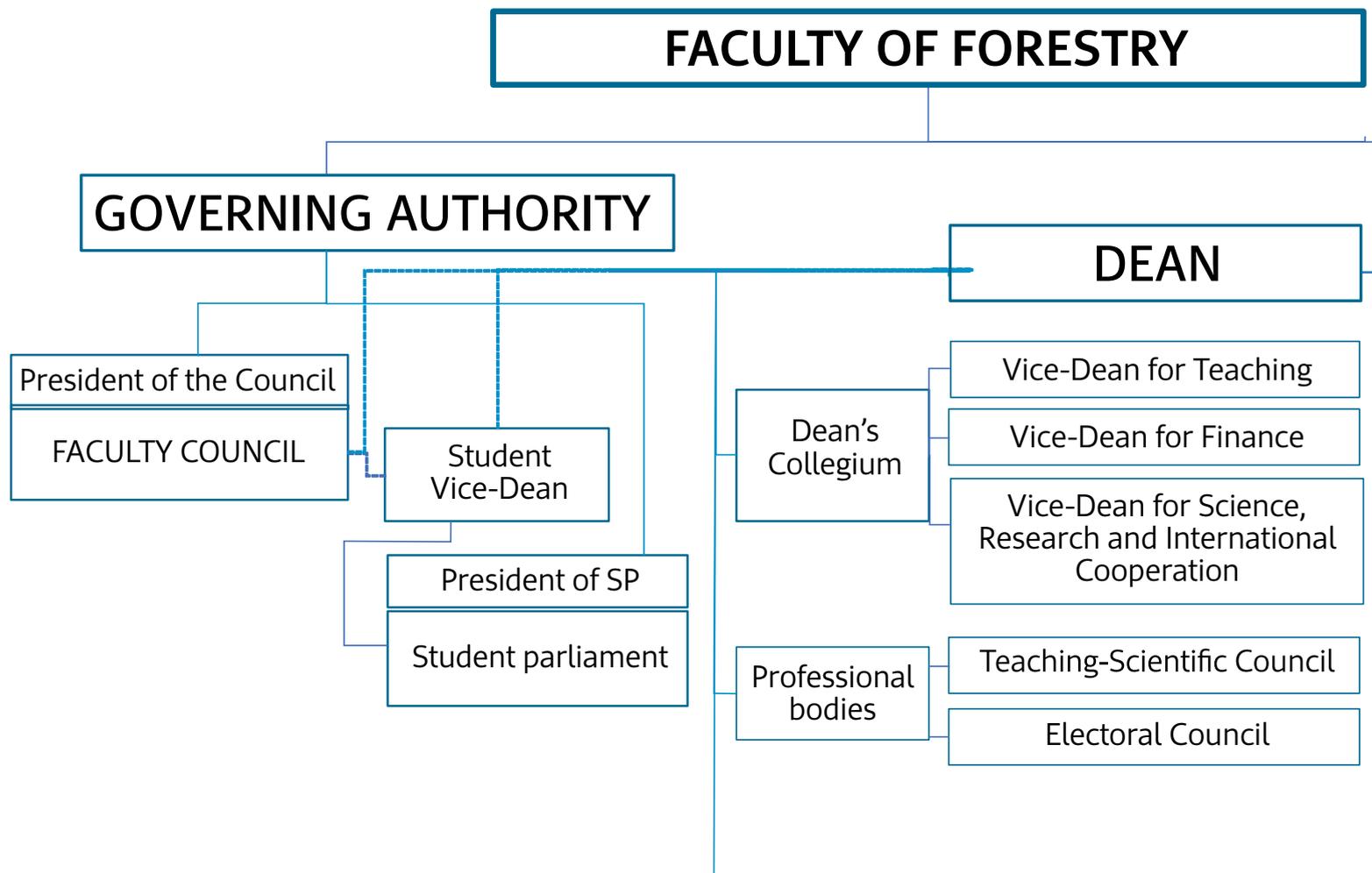
The Certification Bodies perform certification (of processes, products and services, quality systems, environmental protection systems, etc.) from its scope of accreditation. The certification body of the Faculty of Forestry was the first accredited certification body at the University of Belgrade. The accreditation was issued by the Accreditation Body of Serbia in accordance with the SRPS ISO/IEC17065: 2013 standard. The certification body cooperates with domestic and foreign institutions in the field of quality, consumer associations and manufacturers of furniture and wood products.

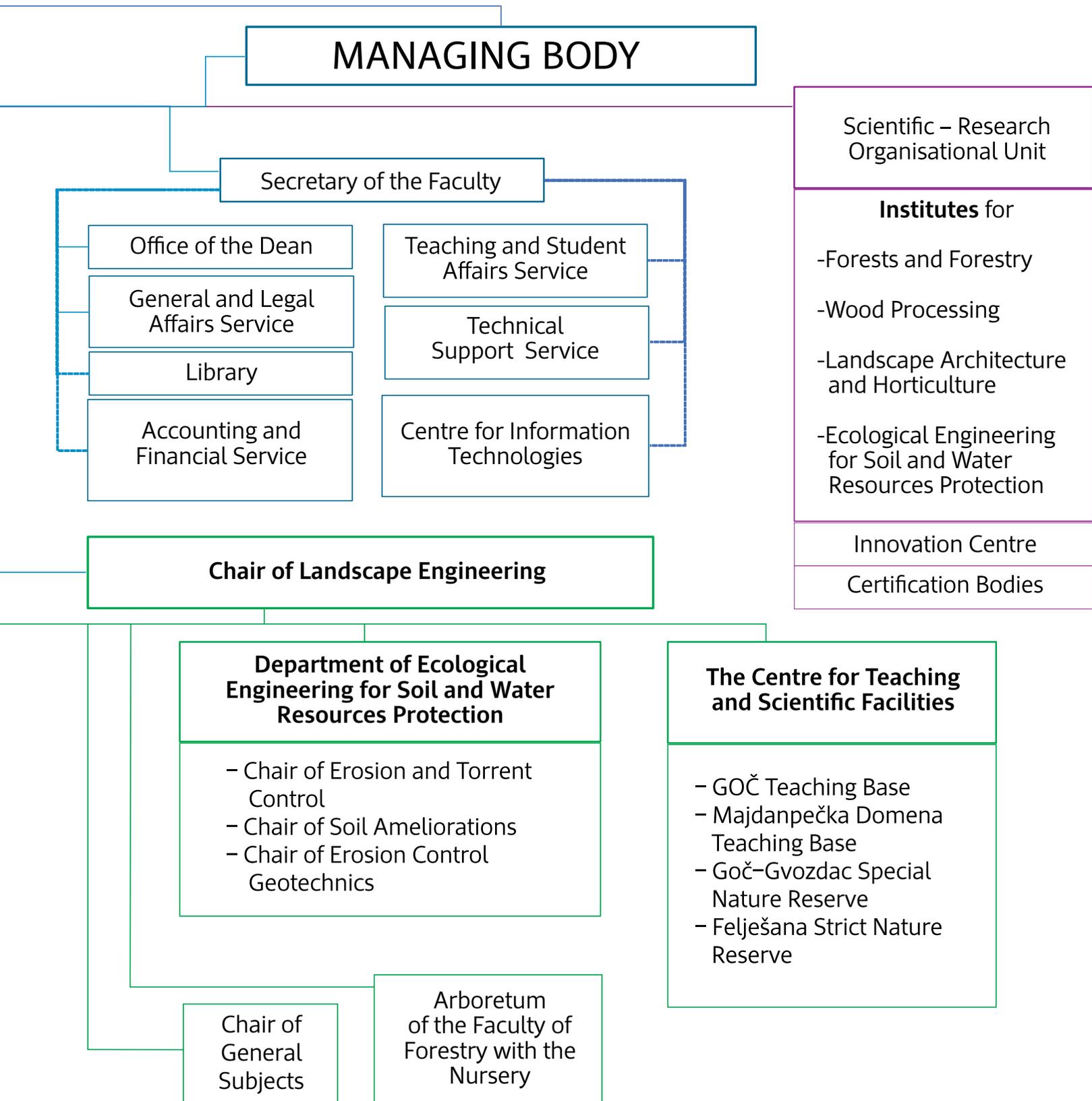
The Professional Service as an organisational unit is in charge of legal, personnel, general and administrative activities, financial-material issues, public procurement, library activities, information technologies, technical support issues, as well as other activities for the purpose of successful realisation of the educational-scientific process and business practice of the Faculty.

The work of the organisational unit *Professional Service of the Faculty* is coordinated by the Secretary of the Faculty, Violeta Anđelković, Bachelor of Law, who directly manages both the Legal and General Affairs Service and the Office of the Dean. The work organisational unit *Professional Service of the Faculty* consists of:

- **The Office of the Dean** - Business Secretary Aleksandra Ćebić, Graduate Engineer
- **The Legal and General Affairs Service** – Head: Violeta Anđelković, Bachelor of Law
- **The Accounting and Financial Service** – Head: Slobodanka Vukelić, Bachelor of Economy

- **The Student and Teaching Affairs Service** - Head: Verica Drašković, Graduate Politicologist
- **The Library** – Head: Branislava Simonović, Graduate Engineer
- **The Centre for Information Technologies** – Head: Saša Sofijanić, Programmer Engineer
- **The Technical Support Service** – Head: Zoran Paunović, Graduate Engineer
- **The Arboretum of the Faculty of Forestry**- Head: Željko Nikolić, Graduate Forest Engineer





Staff

Development of the Faculty and its improvement is essentially related to the development of its staff, primarily the teaching staff, but the non-teaching staff and its work provide very important support to the activities taking place at the Faculty. With the development of the Faculty, i.e. the establishment of new departments, institutes and other organisational units, curriculum reforms, natural processes and legal provisions, the number of employees changed from the moment of independence until February, 2020. In December 1920, the composition of the teaching staff by titles was as follows: four associate professors, one assistant professor and 13 lecturers, six of whom had a university career. Ten years later, the Faculty had five full professors, 14 associate professors, 11 assistant professors and 22 staff members who earned their PhD titles at the Faculty, working as assistants or teachers. Fifty years after becoming an independent institution, the staff of the Faculty consisted of 224 members: 26 full professors, 18 associate professors, 12 assistant professors, one senior lecturer, three lecturers, 58 teaching assistants, two senior professional associates, four professional and technical associates, 37 laboratory technicians, one professional advisor, two employees in the photo laboratory, four employees in the library and 56 employees in the working community. At the end of the first century after the Faculty became an independent institution, the staff of the Faculty of Forestry has 297 members: 33 full professors, 26 associate professors, 33 assistant professors, one foreign language teacher, two PhD teaching assistants, 15 teaching assistants, one principal research fellow, two research associates, two research assistants, seven research trainees, 32 associates in higher education, seven professional and technical associates, one secretary of the Faculty, one employee in the Office of the Dean, seven employees in the Legal and General Affairs Service, five employees in the Service for Teaching and Student

Text drawn up by:

Dr. Mirjana Ocokoljić, Full Professor

Affairs, four employees in the library, 11 employees in the Accounting and Financial Service, three employees in the Centre for Information Technologies, 28 employees in the Technical and Support Issues Service, eight employees in the Arboretum and 67 employees in the CTSF.

In accordance with the Rulebook on the organisation and systematisation of work, employees at the University of Belgrade - Faculty of Forestry belong to the organisational parts of the Faculty. The scope of work of the employees, their competences and responsibilities, conditions for their appointment, job titles, job descriptions performed at workplaces, number of executors and conditions for employment at each workplace at the Faculty, as well as other issues of importance for the organisation and work of the Faculty are harmonised with the Law on the Manner of Determining the Maximum Number of Employees in the Public Sector (Official Gazette of RS No. 68/15 and 81/16), the Decision on the Maximum Number of Permanent Employees in the System of State Bodies, services, the system of the Autonomous Province of Vojvodina and the system of local government for 2017 (Official Gazette of RS No. 61/17, 82/17, 92/17, 11/17, 14/18), with Art. 31 paragraph 2 of the Law on Employees in Public Services (Official Gazette of RS No. 113/17), which prescribes that the number of managers of internal organisational units may not exceed 20% of the total number of employees, the Decree on Amendments to the Decree on the Catalogue of Jobs in Public Services and other organisations in the public sector (Official Gazette of RS No. 6/18) and the Catalogue of Jobs.

Full Professors

- Aleksandar Dedić
- Branko Glavonjić
- Grozdana Gajić
- Damjan Pantić
- Dragan Nonić
- Dragica Obratov-Petković
- Dragica Vilotić
- Zdravko Popović
- Zoran Nikić
- Ivana Gavrilović–Grmuša
- Jelena Matić
- Jelena Tomičević Dubljević
- Ljiljana Keča
- Martin Bobinac
- Matilda Đukić
- Milan Knežević
- Milanka Điporović-Momčilović
- Milenko Mirić
- Milka Glavendekić
- Milorad Danilović
- Milorad Janić
- Milun Krstić
- Miodrag Zlatić
- Mirjana Ocokoljić
- Mirjana Šijačić-Nikolić
- Nada Dragović
- Nenad Stavretović
- Nenad Ćuprić
- Rade Cvjetičanin
- Ratko Ristić
- Slobodanka Mitrović
- Snežana Belanović Simić
- Čedomir Marković

Associate Professors

- Boris Radić
- Branko Stajić
- Violeta Babić
- Vesna Golubović Ćurguz
- Vesna Đukić
- Vladan Ivetić
- Vladislav Zdravković
- Goran Milić
- Danijela Đunisijević Bojović
- Dragan Gačić
- Ivana Bjedov
- Igor Džinčić
- Marija Đurković
- Marija Marković
- Marko Perović
- Milica Rančić

- Mirjana Todosijević
- Mladen Furtula
- Mlađan Popović
- Nebojša Todorović
- Nevena Vasiljević
- Olivera Košanin
- Rajko Milošević
- Ranko Popadić
- Sara Lukić
- Slobodan Milanović

Assistant Professors

- Aleksandar Lovrić
- Biljana Jović
- Biljana Šljukić
- Vesna Nikolić Jokanović
- Vladislava Mihailović
- Vukan Lavadinović
- Gordana Đukanović
- Dejan Skočajić
- Dragana Skočajić
- Dragana Ćorović
- Dušan Jokanović
- Đurđa Petrov
- Ivan Milenković
- Jasmina Popović
- Jelena Beloica
- Jelena Nedeljković
- Jovana Devetaković
- Jovana Petrović
- Katarina Lazić
- Marija Nešić
- Marijana Novaković Vuković
- Marina Nonić
- Milena Vukmirović
- Milena Putnik
- Mira Mirić Milosavljević
- Nadežda Stojanović
- Nevenka Galečić
- Nenad Marić
- Nenad Petrović
- Smiljana Jakšić
- Srđan Svrzić
- Tanja Palija
- Tijana Vulević

Foreign Language Teachers

- Dragana Ilić

PhD Teaching Assistants

- Dušan Stojnić
- Dragan Borota

Teaching Assistants

- Aleksandar Lisica
- Aleksandar Anđelković

- Aleksandra Lazarević
- Branko Kanjevac
- Ivana Stojiljković
- Janko Ljubičić
- Jovan Dobrosavljević
- Katarina Lazarević
- Marko Veizović
- Marko Kazimirović
- Miljan Kalem
- Nikola Živanović
- Predrag Miljković
- Ranka Erić
- Siniša Polovina

TEACHING ASSOCIATES**Research Fellows**

- Dragica Stanković

Research Associates

- Dragana Čavlović
- Snežana Obradović

Research Assistants

- Slavica Čepić
- Suzana Gavrilović

Research Trainees

- Aleksandar Baumgertel
- Aleksandar Vemić
- Aleksandar Popović
- Vukašin Rončević
- Ivona Kerkez
- Marijana Milutinović
- Milica Caković

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- Biljana Pešić
- Bojana Stanković
- Branislava Mihajlović
- Vaso Ivetić
- Vela Jankov
- Vladan Lukić
- Vladimir Ćirović
- Vukašin Milčanović
- Goran Milutinović
- Gordana Petković
- Gordana Petrović
- Dragan Vujičić
- Dragoljub Ivković
- Dragomir Grujović
- Želimir Marković
- Živan Janjatović
- Ivan Malušević
- Ivan Simić
- Ljiljana Đurković
- Ljiljana Pajović

- Milan Ostojić
- Milena Žarković
- Milica Marčeta
- Mimica Stefanović
- Mirjana Perović
- Mirjana Tešić
- Petar Vujičić
- Predrag Stanković
- Radmila Knežević
- Slavica Antonić
- Slavica Petrović
- Snežana Mudrinić

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- Anđelka Simić
- Goran Cvjetičanin
- Gordana Stijepčić
- Jasmina Vučetić
- Mirjana Nećak
- Slobodan Oreščanin
- Uroš Perišić

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- Violeta Anđelković

Office of the Dean

- Aleksandra Čebić

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- Zorica Stevanović
- Milica Božić
- Anita Nikolić
- Svetlana Damnjanović
- Suzana Jordanović
- Nada Stanković

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- Erna Petrović
- Anita Sviličić
- Snežana Stanković
- Milijana Vesić

Library

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- Tatjana Pavličić
- Gordana Radošević
- Jelena Vilotić

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- Slobodanka Vukelić
- Ljiljana Kuzmanović
- Jasmina Babić
- Lidija Jovanović
- Svetlana Jović
- Gordana Milivojević
- Slavica Mihajlović

- Rajka Nikolić
- Ljiljana Tomić
- Irena Cvetković
- Sanela Mitrović

Centre for Information Technologies

- Saša Sofijanić
- Nemanja Vukosav
- Bojan Radić

Technical Support Service

- Zoran Paunović
- Neđo Milošević
- Danica Orlović
- Vinka Aranitović
- Ljubica Vojnović
- Dušica Zlatanović
- Gordana Ilić
- Milka Korać
- Zorka Lazić
- Ljiljana Marković
- Vidosava Osmajlić
- Bora Petrova
- Mirjana Rapaić
- Dušanka Stepanović
- Vinka Stojanović
- Tatjana Filipović
- Jasmina Mimić
- Milijana Ignjatović
- Milena Milovanović
- Dušan Bogosavljević
- Jovo Strinić
- Ivan Despotović
- Stojadin Ristić
- Dragan Stevanović
- Dejan Radosavljević
- Adam Limanović
- Goran Luković
- Ivan Ćirović

Arboretum

- Željko Nikolić
- Nikica Stajić
- Miroslava Živanović
- Dragana Milojković
- Radonja Bubanja
- Ognjen Miljević
- Đorđe Botunjac
- Snežana Nikolić

CTSF

- Aleksandar Vlajnić
- Borivoje Perišić
- Vesna Milošević
- Marina Koštan
- Borislav Bajić

- Miroslav Tanasković
- Radenko Raković
- Goran Županjac
- Milan Županjac
- Milomir Draganjac
- Uroš Cvijović
- Danijela Erić
- Slavica Aleksić
- Slavko Jovanović
- Igor Čukanović
- Zoran Bukara
- Zoran Županjac
- Uroš Zdravković
- Milan Petrović
- Đorđe Cvijović
- Gordana Pantelić
- Slaviša Pavlović
- Predrag Vukomanović
- Radovan Milosavljević
- Rade Pavlović
- Dragan Zarić
- Jelenko Lazović
- Jovan Lazović
- Svetislav Draganjac
- Momir Draganjac
- Gruica Bačević
- Goran Županjac
- Ljubiša Žarković
- Mladen Ivković
- Staniša Živanović
- Nenad Varevac
- Slaviša Obrenović
- Dragan Obrenović
- Miroslav Račić
- Goran Vukomanović
- Desimir Županjac
- Radovan Raković
- Jovica Draganjac
- Aleksandra Marković
- Rajko Obradović
- Miodrag Marković
- Vladimir Uzelac
- Nenad Čingelić
- Slaviša Lazarević
- Zoran Pavlović
- Ivan Savić
- Gordana Ilić
- Radunka Radenković
- Vladimir Puđa
- Mirjana Zlatković
- Vera Kostadinović
- Rajko Crnobrnja

- Saša Marković
- Milorad Jovanović
- Sanela Janošević
- Milovan Marić
- Željko Gavrić
- Ivica Brozović
- Milojko Brozović
- Milutin Trailović
- Ilija Žujica
- Nenad Žujica

(As of June, 2020)

5 Celebration of the Faculty Day,
December, 2011



Centre for Teaching and Scientific Facilities

Brief history

In 1901, the National Assembly of the Kingdom of Serbia passed a decree which gave the southwestern part of Majdanpečka Domena, with a total area of 7715.45 ha, as a present to King Alexander I Obrenović. After the assassination of King Alexander and Queen Draga in 1903, Queen Natalija as the only heir of this property donated the forests of Majdanpečka Domena to the University of Belgrade, as a sign of gratitude to students who prevented her exile from Serbia in 1891. The validity of this decree was postponed due to numerous legal problems, changes of the ruling dynasty, World War I, etc. In 1923, the First Instance Court reached a decision by which Majdanpečka Domena, as a gift from Queen Natalija, is given to the University in Belgrade for management. Therefore, in 1927, a forest administration was established in Debeli Lug for carrying out field activities.

In 1940, Majdanpečka Domena was declared a special Scientific Institute, i.e. an experimental asset of all faculties. The organisation of field classes before and during World War II was not possible due to the lack of accommodation capacities and distance from Belgrade. Soon after that, the forests of Majdanpečka Domena were faced with the Agrarian Reform, but it was soon clear that without field training, it was not possible to continue successful education of new forest professionals.

The first field classes were held in very bad conditions in 1948.

After the separation of the Faculty of Forestry from the Faculty of Agriculture, the need arose for several facilities, where scientific research could be performed as well as field classes and school practice. Activities related to the establishment of experimental estates began in 1952. In the same year, a board was formed to work on the realisation of these activities.

Text drawn up by:

Dr. Milorad Danilović, Full Professor

The board included Prof. Dr. Žarko Miletić, Prof. Dr. Dragomir Milojković and Prof. Dr. Branislav Šikić. The board members presented the need to obtain certain facilities for conducting field classes and scientific research to all important institutions of the People's Republic of Serbia. In 1954, as suggested by the board, the management of the Faculty of Forestry submitted a request to the Executive Council of the People's Republic of Serbia for obtaining three facilities for field classes and scientific research (lowland area - forests in the region Šid, hilly area - forests Crna Reka, Debeli Lug and mountainous area forest Goč-Gvozdac, Kraljevo). In 1956, the government of the People's Republic of Serbia passed a decision on the donation of two experimental estates for field and practical classes, i.e. Goč-Gvozdačka Reka with an area of 3,731 ha in Kraljevo and Univerzitetska Domena with an area of 2,078 ha in Majdanpek. In 1957, immediately after the donation of forests, the management of the Faculty of Forestry passed the Decision on the establishment of the *Momčilo Popović* School Experimental Estate based in Belgrade and two forest administrations, one of them in Kraljevo and another one in Debeli Lug near the town of Majdanpek.

Immediately after its establishment, the experimental estate was managed by the managing board, which had five members.

The first board of directors included Prof. Dr. Danilo Todorović, as the president, and the following members: Prof. Dr. Vladica Popović, Steva Ćirković, Graduate Forest Engineer, Ljubiša Čorbic, Forest Technician and the appointed director Đorđe Jovičić, Graduate Forest Engineer. The activities and tasks of the experimental estate were the responsibility of the Managing Board of the Faculty, which supervised its work.

The People's Committee of the Municipality of Čukarica passed Decision no. 2333 dated 22 February 1957, which entered the experimental estate in the register of institutions with independent financing and its headquarters with a directorate in Belgrade, in 1 Kneza Višeslava Street, and two units, the Kraljevo Forest Administration in 74 Vojvode Putnika Street, and the Debeli Lug Forest Administration near Majdanpek.

In March 1957, as the founder of the experimental estate the Faculty of Forestry adopted the basic tasks of the experimental estate, namely:

- to serve for field classes of forestry students and candidates for postgraduate studies, as well as for conducting field practical classes for pupils of the Forestry highschool in Kraljevo;
- to serve for scientific research in all areas of forestry and related disciplines;
- to conduct best practices forest management in the allocated forests.

At the end of 1964, the experimental estate gained the status of an independent institution that performs activities in the field of education of special interest.

In the following period, there were frequent organisational changes, and substantial changes took place in 1977, when the Forest Experimental Centre Kraljevo was transformed into a Basic Unit of Organised Labour (BUOL) with the status of a legal entity. After more than a decade, the Law on Enterprises abolished BUOLs and the Faculty of Forestry, as the founder, was united with the Forest Experimental Centre Kraljevo.

On January 1, 1989, both BUOLs and the working community became parts of the Faculty of Forestry in Belgrade and they were named:

- The Scientific-Teaching Base Belgrade
- The Scientific-Teaching Base Goč Kraljevo;
- The Scientific-Teaching Base Majdanpečka Domena.

The Centre for Teaching and Scientific Facilities of the Faculty of Forestry was established in 1997. This centre was managed by: Borivoje Perišić, Graduate Forest Engineer, Milorad Vučković, Graduate Forest Engineer, Prof. Dr. Vojislav Bajić, Prof. Dr. Milan Knežević, Dr. Branko Stajić, Assistant Professor, and Prof. Dr. Milorad Danilović.

The Goč-Kraljevo Teaching Base

There are two management units (MUs) within the Goč Teaching Base

- Goč - Gvozdac A (economic forests);
- Goč - Gvozdac B (reclamation unit).

MU Goč – Gvozdac A consists of high fir stands of beech, sessile oak and black pine. These stands and their structure, production capacity and economic importance constitute the main production part of the forests of the teaching base.



6



7

6 Artificially established stands of black pine

7 High stands of beech and fir



8

The Goč-Gvozdac MU, as a reclamation unit, has an area of 764.24 *ha*, of which 139.98 *ha* are private property. The vegetation of this MU belongs to the belt of Sessile oak forests. A small part of the area is covered by artificially established black pine stands, and another small part by mixed beech and fir forests. These are mostly forests with a certain degree of degradation, and they are therefore subject to the reclamation treatment.

The Goč-Gvozdac teaching base, as an integral part of the Centre for teaching and scientific facilities of the University of Belgrade - Faculty of Forestry, deals with forest management, silviculture, forest utilisation, forest protection, nursery production, hunting and other types of utilisation of generally beneficial forest functions.

From its establishment until 1961, head of the forest administration was Miloš Jeftić, Graduate Forest Engineer, and from 1961 to 1968, this duty was performed by Milan Jovičić who was also a graduate forest engineer.

In late 1964, the following administrative bodies were established: council, managing board, director and the council of working units. In 1966, the Forest Administration in Kraljevo was renamed to Experimental Forest Centre with the following management bodies:

- Work Unit Council;
- Head of Forest Administration - Work Unit.

Experimental Forest Centre Kraljevo and the Faculty of Forestry in Belgrade merged in 1988 into a single work organisation, and the complex work organisation of the experimental estate was deleted from the court register and lost its status of a legal entity.

The number of workers in forest production was reduced, and the basic jobs (tree felling, skidding of wood assortments, removal of spatial wood, loading, etc.) were performed by third parties.



9

The managing bodies in the subsequent period were: the Council of the Faculty of Forestry, Dean of the Faculty of Forestry, as the executive body with the heads of the Teaching and Scientific Bases, and professional bodies were the Teaching-Scientific Council and the Professional Councils of departments and teaching bases.

In 1961, Milan Jovičić, Graduate Forest Engineer, took over the duty as the head of the Forest Administration EFC in Kraljevo. As the head of the Management Board, he was primarily committed to the implementation of the basic tasks of the experimental estate. In that sense, he was engaged in the construction of the accommodation facilities for teachers and students, the introduction of a water supply network, the construction of transmission lines from Kamenica to Dobre Vode and the improvement of working conditions.

In 1967, Milivoje Sajić, Graduate Forest Engineer, was elected head of the Experimental Forest Centre, and in 1978, he was elected the first director of the BUOL. As a director he sets up a new organisation in forest production. In addition to the already existing technological units in forest production, he also established a plant for primary wood processing.

Milivoje Sajić, who modernised forest production, made a significant contribution to the work of the teaching bases. In 1993, after his retirement, Mirko Škorić, Graduate Forest Engineer, took over as the Manager of the Goč Kraljevo Teaching Base.

He came to the Goč Kraljevo Teaching-Scientific Base after the integration of the teaching base into the teaching-educational process of the Faculty of Forestry in Belgrade. The priority jobs of forest production from the previous period were replaced by "Healthy food" programmes and projects and increased recreational and touristic offer. In that period five mini-farms were established, and the existing facilities were reconstructed to receive guests.



10

In the 1990s, numerous activities were carried out for the improvement of accommodation facilities, in order to improve the recreational and touristic offer. In that period, a very good cooperation was achieved with the Lovoturs Company from Novi Sad.

In addition to the adaptation of accommodation facilities, mini-farms were established and several other contents were provided for tourists. Such a fruitful tourist period lasted until 2000, when a change in the business course took place. Mini farms were closed and the equipment serving for the tourist offer was sold out, while very little was invested in tourism development. The labour force of the Faculty in forest production was increasingly replaced by private labour force, and problems with the profitability of processing capacities emerged. Such a situation led to the shutdown of sawmills. Wood assortments that were processed in sawmills until then were placed on the market as roundwood.

Until 2016, the production process was performed by both the labour force of the base and the private sector, and then the entire production was taken over by the labour force of the base. Meanwhile, the accommodation facilities for students, teaching staff and tourists were deteriorating, and it was necessary to execute their reconstruction.

The management of the Faculty provided funds from European Union grants for the reconstruction of the Studenac building, which was in a very bad condition. Over a period of two years, a new building was built, with a capacity of 58 beds, three dining rooms, a conference hall, etc.

However, the funds invested were not enough to equip the building, and the facility became functional through donations and significant funding allocated by the Faculty. In recent years, significant funds have been invested to arrange the surroundings of the buildings and other facilities.



11



12

There are five buildings within the tourist resort: Novi Studenac, Piramida, Villa Vlasta, Villa Planinka and an annex building. The total capacity of the buildings is 150 beds in rooms ranging from single to quadruple. The building has a reception, internet centre, cafe bar, restaurant with 100 seats, a meeting room with 30 seats, an Alla Carte restaurant with 30 seats, a conference hall with 120 seats and two classrooms.

There are basketball and handball courts within the resort, as well as a pond with 6 pools for trout farming.

Five hiking trails of 4–18 km in length have been made, and a cycling track which connects the towns of Kraljevo and Vrnjačka Banja passes by the resort.

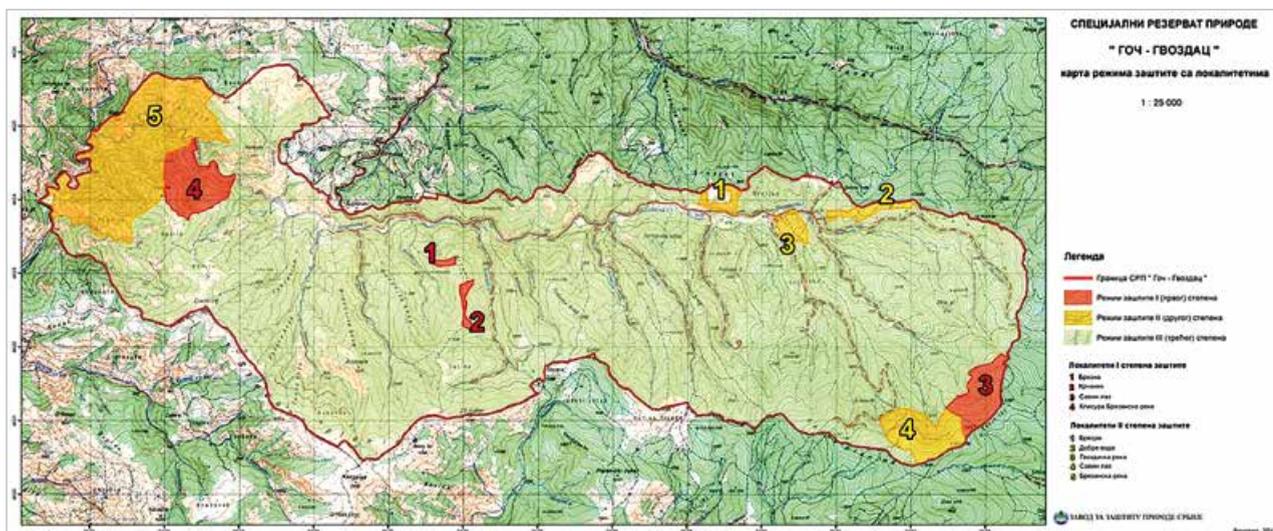
10 Roasting place pavilion

8 The Piramida building

11 The Studenac building

9 Villa Vlasta

12 The Piramida building after renovation



13

Goč–Gvozdac Special Nature Reserve

Based on 2014 Decree of the Government of the Republic of Serbia no. 2981, the Goč-Gvozdac forest complex was proclaimed Special nature reserve of category II. Zones in which protection regimes of degree I, II, III are implemented can be distinguished within the Goč-Gvozdac SRP.

The protected natural area covers almost the entire watershed of the Gvozdacka River, named the Brezanska River in the lower course.

According to the valid forest division, Goč is divided into management unit A - the upper flow of the river and the eastern part of the complex (former state forests) and management unit B - lower river flow (former communal forest).

The main watercourse of Goč is the Gvozdacka River, i.e. the Brezanska River, whose watershed covers an area of 43.75 km² with over 110 springs.

The most common tree species in the protected natural area is beech, whose share in the total volume is 52.4%, while fir accounts for 39.7% and black pine for 5.8%. Although their share is negligible, it is important to note the presence of valuable broadleaves, such as mountain elm and mountain maple, whose tending, conservation and increase in the growing stock is one of the most important long-term tasks of forest management. The following species from the list of relict, endemic, rare and endangered species are present on Mt. Goč: mountain maple (endemic species), Serbian spruce - introduced (relict and endemic species), periwinkle (relict species), black hornbeam (relict species), wild cherry, wild apple, aspen, birch, white ash (as rare and endangered species) and wild pear, mountain ash, mountain elm (as rare species). The listed species (i.e. their sites) are subjected to a special protection regime.

The forest is composed of 25 tree species, of which stand out an endemic of the Balkan Peninsula - mountain maple and a variety of black pine. In addition, a special rarity in the area of Goč is a preserved community of beech and fir forests.

The special nature reserve is also inhabited by 129 bird species, of which 108 are nesting birds, 20 species of amphibians and reptiles and 27 species of mammals.

Thanks to its natural features, marked richness in water and preserved remains of early mining from Roman times, this area is characterised by a touristic potential with a predominantly health-recreational character, in addition to its priority scientific-research function as a teaching basis for best-practices forest management. The area of the protected natural asset is 3,957 ha 17a and 39 m².

Majdanpečka Domena Teaching Base

The “Majdanpečka Domena” teaching base in Debeli Lug is an area that is particularly interesting in view of the composition of flora. Plant species occurring in this area indicate the connection of the Moesian flora with the flora of the Dacian, Pannonian and Illyrian provinces, and with the Carpathian province. In addition to that, the South Dacian – West Moesian endemic *Campanula crassipes* can be found there.

Majdanpečka Domena is a broadleaf area, and beech forests are especially dominant.

A significant number of medicinal plants can be found in Majdanpečka Domena. A total of 222 species have been identified, and among them some are rare and endemic species.

The Crna Reka forest management unit (economic forests) is part of Majdanpečka Domena.

The Crna Reka management unit with the Felješana SNR, as one of its parts, is located on the slopes of the Homoljske Mountains in the southwestern part of Majdanpečka Domena. It is a very interesting landscape due to the dissected relief of the terrain, which extends from 211 to 811 *m* above sea level, as well as due to the very diverse geological composition on a relatively small area and a very rich and varied floristic composition. The feature of the forests in this area is that they are dominated by high stands, and mostly pure beech or sessile oak stands. In addition to beech and sessile oak, almost all broadleaved tree species of local dendroflora are present, as well as introduced coniferous species in the form of forest crops.

The Crna Reka management unit is characterised by a relatively low production potential due to the dominance of stands of high origin. The volume increment amounts to 7,731.7 *m*³, and the annual estimate in the area of this teaching base is about 3,500 *m*³ of gross wood volume, of which about 2,500 *m*³ of beech, 500 *m*³ of oak and 500 *m*³ of other broadleaves and conifers.

Felješana Strict Nature Reserve

Pursuant to Article 41a, paragraph 2 of the Nature Protection Act (Official Gazette of RS No. 36/09, 88/10, 91/10 and 14/16) and Article 42, paragraph 1 of the Law on Government (Official Gazette of RS, no. 55/05, 71/05, 101/07, 65/08, 16/11, 68/12-US, 72/12, 7/14-US and 44/14), the Government of the Republic of Serbia passed the Decree on the proclamation of Felješana a Strict Nature Reserve, which is classified in category I of national, i.e. exceptional importance. In phytocoenological terms, the Felješana SNR represents a unique autochthonous old, well-developed, monodominant montane beech forest, with a low dead cover share, an unfavourable humification process, sparse shrubs and low weediness. The stand is about 300 years old, with trees reaching heights of over 40 metres.

The general assessment of the state of the environment in this protected area is good, in terms of preserved plant and animal species and unaltered natural features. In the immediate vicinity of the borders of this strict nature reserve is Danilo's spring.

The area of the Felješana SNR is 15.28 *ha*, and it is fully state-owned.

13 Area of the special nature reserve with zones of protection

14 Forests of Majdanpečka Domena

15 Student practice in the Felješana Strict Nature Reserve

16 Danilo's spring



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17 The teaching-scientific facility

18 A spring aspect of the Arboretum, one of the side tracks

19 A summer aspect of the Arboretum

Management of the *Majdanpečka Domena* Teaching Base

In the period from 1949 to 1953, head of the experimental estate was Miloš Životić, Graduate Engineer. In that period, all activities in the base were aimed at creating conditions for efficient field classes.

Miodrag Erić, Graduate Engineer, was the manager of *Majdanpečka Domena* in the period from 1953 to 1956. After Miodrag Erić, Graduate Forest Engineer had left, for a short time the teaching base was successfully managed by Boško Mihailović. In the period from 1956 to 1958 the position of the manager was taken by Stevan Ćirković, Graduate Forest Engineer, and he was in that position when the Experimental Estate was founded. Mihailo Baljinac was head of the administration in 1958. During his service, he distinguished himself as a good manager, and after leaving he left numerous forest crops. Professors of the Faculty of Forestry, who periodically changed as presidents of the Managing Board, played a significant role in the work of the experimental estate. Slobodan Đorđević, Graduate Forest Engineer, was in the position of head of the Forest Administration from 1959 to 1961.

In the mid-1960s, the business operations progressed rapidly. The plans set in the forest-economic management plan were implemented, as well as felling plans, silvicultural plan, the construction of forest road infrastructure and the construction of necessary facilities. Stevan Dunić, Graduate Forest Engineer, took the position of head of the Forest Administration with extensive experience in practice, which he acquired in Bosnia. During his leadership the base achieved remarkable results. In the meantime, organisational changes took place. Work units strengthened professionally. A unit for mechanical wood processing was established. A vehicle fleet was formed, machinery was procured etc. Substantial changes took place

in 1977, when the Law on associated labour was passed. The Momčilo Popović Experimental Forest Centre - *Debeli Lug* was registered as a BUOL at the District Commercial Court in Belgrade.

In 1965, Gavriilo Nikolić, Graduate Forest Engineer, became manager of the *Debeli Lug* forest administration. In 1967, Milorad Vučković, Graduate Forest Engineer, became head of the forest administration. During his management, significant results were achieved in the field of forest opening and the modernisation of primary wood processing plants. A kiln and steam room were built, the machinery was renewed, etc.

Since early 1980s, the tending of forest crops was particularly important. In the development of the *Majdanpečka Domena* Teaching Base, a significant contribution was made by Jovica Grbić, Graduate Forest Engineer, who developed into a highly skilled engineer quickly upon arrival. In the 1990s head of the teaching base was Božo Todorović, Graduate Forest Engineer and upon his retirement, he was replaced by Borivoje Perišić, Graduate Forest Engineer. Since 2016, Master Forest Engineer Vladimir Puđa has been the manager of the Forest Administration.

Accommodation facilities

The teaching base has student accommodation facilities. The accommodation capacity is 60 beds. The facilities are used by students of the Faculty of Forestry and Pharmacy in Belgrade, as well as other guests (artists' colonies, etc.).

Protected natural area Arboretum of the Faculty of Forestry

The establishment of the Arboretum of the Faculty of Forestry began in 1955, after the Faculty moved from the building of the Faculty of Agriculture in Zemun to Banovo Brdo. The initiator and the first manager of the Arboretum was Prof. Dr. Branislav Jovanović. Prof. Dr. Aleksandar Tucović and Prof. Dr. Emilija Vukićević, who were his teaching assistants at the time, also participated in the establishment of the Arboretum. The design documentation was prepared by architects Branko Petričić and Nikola Gavrilović. The project envisaged the establishment of a dendrologic collection on an area of two hectares, which was implemented in the next few years. By applying planned planting an extremely valuable collection was created, with abundant dendrological material consisting of numerous indigenous and allochthonous species of trees and shrubs, as well as exota. The planting was conceived by systematic relations, with a large number of seedlings of the same species, whose number was supposed to be reduced to a few representative specimens over time. The nursery stock was carefully selected and procured from a variety of nurseries in the country, while indigenous species were brought from the field from different parts of Serbia. A number of decorative species were procured from the Volčji Potok Arboretum in Slovenia, and some were obtained as a gift from the botanical gardens in Skopje, Vienna and Zürich. Over time, the number of taxa increased considerably, and the space grew into an important natural asset in the area of the City of Belgrade.

In the period from 2007 to 2010, the Institute for Nature Conservation of Serbia produced a study of protection of the Faculty of Forestry Arboretum within the Regulatory and Spatial Plan of the City of Belgrade in order to evaluate the significance of the Arboretum through the identification of natural and created rarities in biological, ecological and educational terms. On the basis of the prepared study and in accordance

Text drawn up by:
Željko Nikolić, Graduate Engineer



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with the Law on environmental protection the extended area of the Arboretum was proposed for legal protection to the Government of the Republic of Serbia.

By the decision of the Assembly of the City of Belgrade of 7 July, 2011, the natural area Arboretum of the Faculty of Forestry was declared a protected area. It was declared a protected area as a monument of nature due to its unique, botanically diverse collection of dendroflora in the open and for the preservation and improvement of the autochthonous gene pool, allochthonous and exotic dendroflora, as well as rare, endemic and relict species, intended for scientific research and education. This protected area is classified in category III as a protected area of local importance, with a protection regime of the second degree. The protected area was entrusted to the University of Belgrade – Faculty of Forestry for management, with defined activities and measures aimed at the protection, maintenance, monitoring and improvement of its natural and created values.

From the original area of 2 ha, the Arboretum is today expanded to an area of 6ha 69a and 62 m². It is located at cadastral plot no. 10033/1 of C.M. Čukarica, and it is state-owned. It represents a created botanical value on a former habitat of mixed autochthonous forests of Hungarian oak and Turkey oak (*Querceto-frainetto cerris subass. aculeatetosum* Jov.=syn. *Rusco-Quercetum frainetto-cerris* Jovanović, 1951). It stretches over the northwestern slope of Košutnjak above the left bank of the Topčiderska River at an altitude ranging from 110 to 125m. The parent rock consists of silicate rocks covered with layers of loess and deluvial deposits. The soil is characterised as loess cambisol. It is spatially and functionally connected to the system of city greenery.

The protected area is divided into fields of different sizes with a rich and diverse dendroflora made up of indigenous and



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non-indigenous tree species. On the whole area of the Arboretum there are about 2,000 specimens of deciduous (*Angiospermae*) and coniferous (*Gymnospermae*) species.

Plant species from the IUCN red list, which are protected in their natural habitats are also present in the Arboretum: *Picea omorika* (Pančić) Purk. – Serbian spruce, *Acer hyrcanum subsp. intermedium* (Pančić) Bornm. – Balkan maple, *Forsythia europaea* Degen & Bald. – Balkan forsythia, *Prunus laurocerasus* L. – Laurel cherry, *Laburnum anagyroides* Medik. – Golden chain tree, *Fraxinus pallisae* Willmott – Balkan ash, *Ilex aquifolium* L. – Holly, *Quercus trojana* Webb – Macedonian oak, *Taxus baccata* L. – Common yew and *Pinus heldreichii* H. Christ – Bosnian pine. In addition, interesting specimens and dendrological rarities in the Arboretum belong to the globally endangered *Metasequoia glyptostroboides* Hu & W.C. Cheng – Dawn redwood and *Petteria ramentacea* (Sieber) C. Presl – Dalmatian Laburnum, an endemic species of the Balkan Peninsula.

The expansion zone within the spatial structure of the Faculty yard covers an area of 3.13 ha, which includes the building of the insectarium, a nursery with a greenhouse, an area with indigenous forest vegetation, a walking trail built in 2017, bordered with pieces of roundwood, as well as a park for the horticultural therapy involving disabled children and youth.



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20, 21 Arboretum - winter aspect

22 Entrance of the Natural monument Arboretum of the Faculty of Forestry

23 *Picea omorika* (Pančić) Purkyne – Serbian spruce - a species from the IUCN red list in the Arboretum

24 The walking-trim trail in the extended zone of the Arboretum



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The building of the insectarium was completely renovated in 2016. In addition to the chamber belonging to the Chair of Forest Protection, the facility also has a fully equipped classroom intended for the promotion of the Arboretum, and may be used for other teaching, scientific and professional activities.

The nursery of 50 acres includes a fenced part, 16 Dunemann seed-beds and a 200 m² greenhouse, whose reconstruction was performed during 2001 and 2002.

The primary function of the nursery is practical teaching for students and pupils of secondary vocational schools. In addition, experiments are set up in the nursery within the framework of teaching and scientific activities for students and various project activities. The greenhouse is also used for the commercial production of decorative planting stock. The following professional associates were heads of nursery production until retirement: Marija Pišler-Gojnić, Graduate Engineer, Aleksandar Mančić, Graduate Engineer and Mirko Škorić, Graduate Engineer.

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25 Classroom in the insectarium building of the Arboretum

26, 27 Commercial part of the Nursery with a Greenhouse

28, 29 Scientific research in the Nursery

30, 31, 32 Practical classes for students in the Nursery



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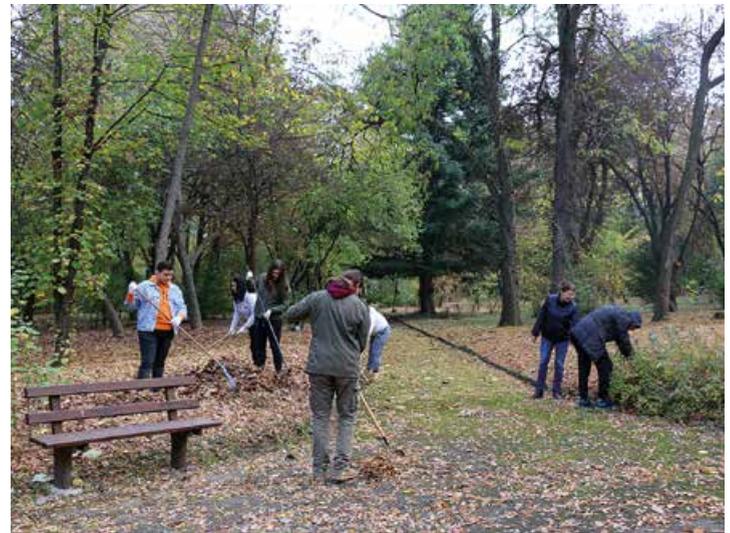
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33 A visit of preschool children to the Arboretum: strengthening of environmental awareness

34, 35 Practical classes for pupils of the Drvo Art Technical School in the Arboretum

36 Practical classes for pupils of the Drvo Art Technical School in the Greenhouse

In addition to numerous activities of students of the Faculty of Forestry taking place in the Arboretum, it is also visited by primary and high school pupils from the entire territory of the City of Belgrade, kindergarten children, as well as teachers and students of other faculties. In addition, practical classes for pupils of the Drvo Art technical school and the Secondary Craft School take place in the Arboretum, as well as horticultural therapy for the users of the Centre for Accommodation and Daycare of Disabled Children and Youth. Occasionally, companies organise socialising and work in a natural surroundings within the framework of their socially responsible activities.



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37 Horticultural therapy for the users of the Centre for Accommodation and Daycare of Disabled Children and Youth

38, 39, 40 L'OREAL BALKAN company and the Environmental Improvement Centre - Citizen Day voluntary action in the Arboretum (May of 2019)



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In recent years, with the funds of the City Secretariat for environmental protection of the City of Belgrade, and within the framework of the protected area management plan, various investments have been implemented that significantly contribute to the improvement of the Arboretum. During 2019, a new crushed stone path was made extending from the gate of the Arboretum to the main asphalt path. All lighting poles were reconstructed and new led lighting was installed. In addition, a project of complete reconstruction was made for all the trails in the Arboretum, whose implementation will begin in 2020.

Since 1987, the Arboretum has been a special work unit, which became an integral part of the Teaching base Belgrade in 1991 within the newly established Centre for Teaching and Scientific Facilities of the Faculty. In the 2006 Statute of the Faculty of Forestry the Arboretum was annexed to the Chair of Forest Ecology of the Forestry Department. According to the latest statute from 2019, the Arboretum is one of the three protected natural assets belonging to the Faculty. Since 1971, professional associates have been working in the Arboretum, and so far this position has been held by: Dr. Olga Purić Daskalović, Jelena Vučetić, Grad. Eng. and Dr. Marina Vukin. Today, the professional associates working in the Arboretum are: Nikica Stajić, Grad. Eng., Dragana Milojković, Grad. Eng. and Miroslava Živanović, Grad. Eng. By a decision of the dean of the Faculty of Forestry, Željko Nikolić, Graduate Engineer, was appointed as the manager of the protected natural area Arboretum of the Faculty of Forestry in 2016.



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41 Marked plant species

42 GREEN FEST, October, 2019 – An exhibit of the Arboretum at the 10th jubilee Green Culture Festival, Belgrade Youth Centre

Library

The main role of the library is to provide students, professors, researchers and associates involved in the processes of education and scientific research with the information and publications required for their studies, scientific, professional and research work.

BRIEF HISTORY OF THE LIBRARY DEVELOPMENT

Establishment and development until 1954

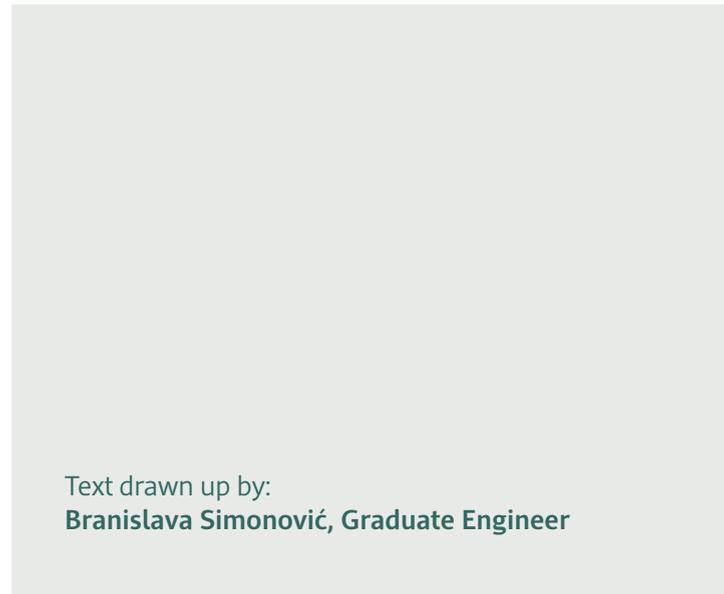
Since the beginning of classes in 1920 at the Forestry Department of the Faculty of Agriculture in Zemun there have been no official data on the work of the library. The entire library holdings, as well as the archives of the Faculty of Agriculture and Forestry, were burned down in the Allied bombing of Belgrade in 1944.

Based on the 1949 decision of the Government of the People's Republic of Serbia the Faculty of Agriculture and Forestry was divided into two independent faculties. That is when the first independent Faculty of Forestry in Yugoslavia was founded, and a library was also established as part of that Faculty.

The period from 1954 to 1980

During the relocation of the Faculty of Forestry in 1954, the library with one part of the library holdings from the field of forestry and related disciplines was moved to Banovo Brdo. These holdings were set aside from the common holdings of the Faculty of Agriculture and Forestry. The library also obtained book holdings, mainly from the field of forestry, from the disbanded Ministry of Forests and Mines.

The library was housed in rooms not specifically built for a library, and initially only one librarian worked in the library. The entire holdings (books and magazines) were mixed in the



Text drawn up by:
Branislava Simonović, Graduate Engineer

warehouse because of the lack of systematised way of storing of the holdings, which made it difficult to find the right publication. Until 1956, there were no professional librarians in the library.

Systematised work and arrangement of the holdings in the library of the Faculty of Forestry began with the employment of Sofija Stošić, a librarian who passed the professional librarian exam and had a four-year work experience in the Library of the Institute of Forestry of the People's Republic of Serbia (1956). In 1957, Sofija Stošić was appointed as the first manager of the Faculty of Forestry library. The inventory of holdings was made, and the formation of a card catalogue was initiated immediately after that. That catalogue consisted of book cards, which were also sign out sheets at the same time. In the next phase, the library started the development of catalogue sheets and the formation of the author's catalogue. Such a way of publications processing enabled quick and easy access to information about each publication that the users needed.

Books and journals were arranged in a way that they can be found more easily. All books were arranged by format and by *numerus currens* within a certain format. Journals were arranged by title, within a single title by years and volumes, and finally by issue numbers and also by *numerus currens*.

In order to do all that, it was necessary to print and bind inventory books (which became a legal obligation and they had to be properly stitched and sealed with red wax) and then print book cards and catalogue sheets. On June 1, 1956, the dean Prof. Dr. Danilo Todorović signed the first inventory books (inventory of books and inventory of periodicals).

In parallel with the activities on the arrangement of the holdings, a lot of work was done on the procurement of appropriate equipment (cabinets, tables and chairs for the student

reading room). The reorganisation of the space was initiated due to the crampedness of the warehouse and the lack of space for a professors' reading room.

The Faculty provided the funding and the warehouse was moved to a larger room, with the existing shelves for publications which were customised to make books easily accessible and at one's fingertips. A students' reading room was created and one office was rearranged as a professors' reading room. In the hallway of the building, which was wide enough, two offices were made to accommodate catalogueues and lockers for student textbooks set aside from the main holdings. Encyclopedias, dictionaries and manuals were taken out of the main holdings and placed in the professors' reading room, which was at the same time the office of the library manager. The Faculty allocated some funding from its budget for the purchase of (domestic and foreign) books and journals. The decision on the type of publications to be purchased in the current year was made by the Library Board in agreement with the library manager, and in consultation with the teaching staff of the Faculty. In addition to purchasing, the holdings were replenished by an exchange with relevant institutions from the country (then SFRY) and from abroad for the Bulletin of the Faculty. Considerable renewal of the library holdings was based on the editions which were delivered to the library by the Association of Forestry and Wood Processing Engineers and Technicians of Serbia.

The obligation to submit defended doctoral dissertations and master theses to the library of the Faculty of Forestry was introduced in the 1960s.

After arranging the library premises, the next phase was systematisation of the holdings. A modern way of content processing and classification of books was introduced. A professional UDC classification by fields was performed, which is still used today. A professional card catalogue was formed. This classification was helped greatly by a forestry expert - Dr. Dragoljub Mirković, a professor of the Faculty.

In 1960, the library employed skilled staff, which enabled a division of labour and significant improvement of the quality of work.

Other catalogue were formed in addition to the professional card catalogue (in accordance with the UDC classification), such as a catalogue of articles from professional journals, a catalogue of doctoral dissertations and Master of Science theses and a dictionary catalogue.

In this period, a regular revision of the book holdings was performed. Catalogue sheets of foreign books were regularly delivered to the University Library and the Yugoslav bibliographic institute for making the catalogue of foreign books. At the end of each year, journals and books from the student holdings were joined and sent for binding to be protected from deterioration.

The period from 1980 to 2000

In the early 1980s, began the inventory of scientific and professional articles of the teachers and associates of Faculty of Forestry. That job was entrusted to Branislava Lukić (Milinkov), who with her knowledge and experience, as well as perseverance managed to collect and process almost everything that was published by our teachers and associates in the period from 1920 to 2000. This extensive work was done with a significant contribution of Milorad Šijak, Graduate Forestry Engineer, who made the author and subject registers, as well as a UDC classification of collected articles.

Five books were published covering the period from 1920 to 1995, while for the period from 1996 to 2000 there was only an inventory.

The library staff also collected and processed the material for the bibliography of projects for the period from 1948 to 1990. Only the first book out of a total of seven was published. The data were processed electronically.

In the period from 1980 to 2000, the Library of the Faculty of Forestry improved its work, but with minor stagnations due to the well-known crises in our society, which affected the activity of the library. In the early nineteen eighties scientific and professional journals were procured without any major problems. Over 70 foreign journals were purchased, and more than 200 foreign and domestic journals were exchanged.

By the end of 1990, the library had considerable library holdings of books and journals.

In 1990, the work in the library was modernised, with the procurement of computers and installation of the BIB program for library activities and a more efficient processing and use of the library holdings, as well as because of the possibility of being included in appropriate information systems. In 1998, a new program BIBLIO was introduced to improve the information system of the library.

The lack of financial resources and an increase in the number of students made it difficult to provide a sufficient number of copies of textbooks and course packets for students.

After 1992, the supply of books and journals was reduced due to international sanctions imposed on Yugoslavia at the time. With great efforts and engagement of the Faculty and understanding of the importer (Nolit), a considerable number of journals were provided from abroad, which also used to be procured before the economic blockade. This ensured continuity and enabled our scientists to be updated on worldwide scientific developments.

When the sanctions were eased, the procurement of foreign journals was reenabled, so that the holdings were gradually renewed. In 1996, the Ministry of Science and Technology of Serbia started financing the purchase of foreign professional journals, which enabled the library to receive 12 different journals.

43 The rarity holdings

In the period from 1990 to 1996, a reconstruction of the Faculty building was carried out, and a new room layout and organisation of the library space were introduced.

Since during the reconstruction of a part of the building in which the Library premises were located it was necessary to free the warehouse space. All books were moved to inappropriate rooms, which resulted in an inevitable damage to one part of the holdings. After such a movement, it was necessary to do a complete revision of the book holdings (check all publications from the first to the last inventory number), which was done in 1998. Damaged and outdated publications were written off, and the holdings were arranged in a new space. By decision no. 06-218/6 of 13 March 1997, the Faculty of Forestry Library was entered into the central register of libraries of Serbia run by the Svetozar Marković University Library.

At the end of this period, with the retirement of Milorad Šijak and Branka Lukić, the library staff was reduced, and Mirjana Golubović was left to enter the new millennium on her own with the occasional assistance of non-library staff who helped her with physical jobs.

The period from 2000 to 2020

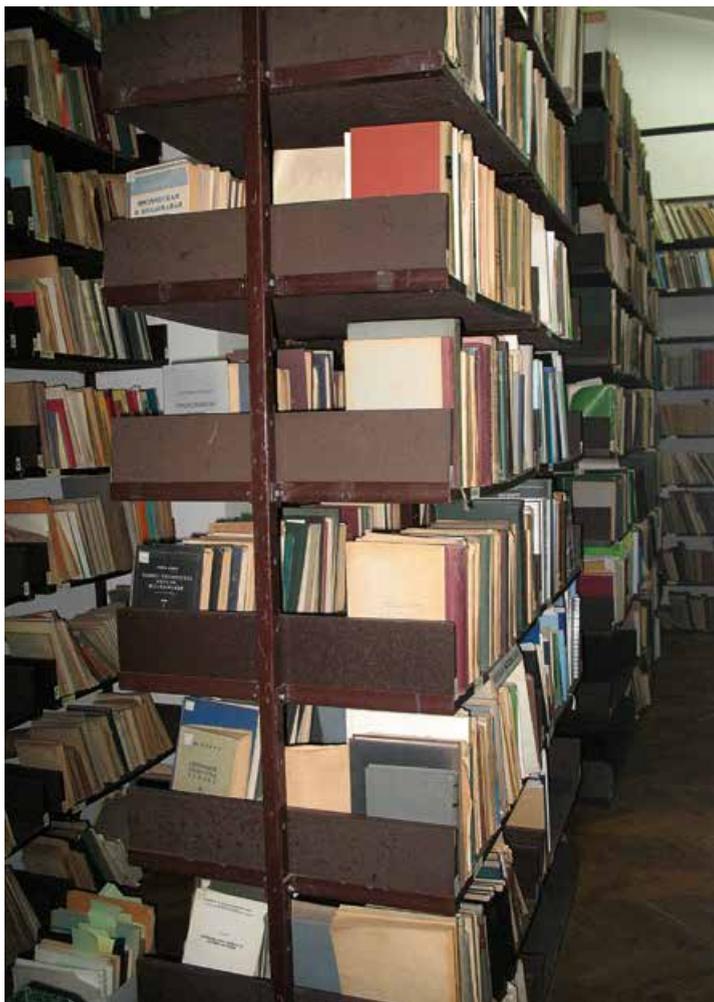
Respecting the need of the library for more staff in order to function properly, with the understanding of the management of the Faculty, Branislava Simonović, Graduate Engineer, was employed as a librarian.

Since 2004, the Faculty has had internet access via the Computer centre of the University of Belgrade and thus began the use of the internet as a source of information in the library.

New computer equipment was procured and installed (computers were connected to the internet both for the staff and users, with the possibility of the printer and a scanner use).

As the amount of scientific information increased, the need grew for organised scientific information and the creation





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of an appropriate information system. Since 2004, as a result of that need, internet access was provided to electronic scientific sources (journals, books, databases) through the Library Consortium of Serbia for Unified Procurement (KoBSON). The whole system of subscriptions to foreign sources of scientific information, both in the electronic and paper form, is funded exclusively through the Ministry of Education, Science and Technological development, as part of integrated procurement. The library staff underwent training to work with the KoBSON database and in a completely new environment.

Through the efforts of Mirjana Golubović, the Faculty of Forestry Library joined the Virtual Libraries of Serbia (VBS) project, and the agreement on full membership of the library in the COBISS.SR library and information system was signed in 2004. This project connected libraries in Serbia into a single information system, and library users were provided with an organised and rational way of getting access to information and documents in the electronic form.

By obtaining a license to work in the COBISS.SR system M. Golubović and B. Simonović started their work on entering the records of publications into the electronic catalogue.



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It was a transfer from a traditional card catalogue to a publicly available electronic catalogue. For the sake of efficiency, it was agreed to enter all publications received by the Library since 2000. The old part of the holdings, which were not entered in the e-catalogue in that period, can be searched in the library using the card catalogue.

The recording of scientific and professional articles was continued as well as the production of personal bibliographies of professors and researchers at the University of Belgrade - Faculty of Forestry by entering data into the COBISS system, making them available to interested bibliography users via the internet.

In 2007, using the possibilities of new technology and financial assistance from the Tempus Foundation, the library staff made its internet presentation (the Library was among the first academic libraries with their own website).

In this period, the library became an intermediary in the acquisition of information and an information centre with electronic catalogue, created databases, equipped with modern technology that allows access to information and material in the electronic form, which is a novelty compared to its former role.

44 Monographs
warehouse

45 Periodicals
warehouse

Since 2010, there has been a successive admission of new library staff, including Gordana Radošević, M.Sc, Jelena Vilotić, and Tatjana Pavličić, Grad. Eng., which made it possible to provide users with education and assistance in finding all kinds of scientific and professional information through the following library staff activities: by introducing the Faculty staff to the information apparatus and the manner of use of publications from the library holdings; by providing help in coping with the electronic and card catalogue of the library and the applied classification schemes; through thematic searches of online available library catalogues, databases and electronic services; through user training for independent work with databases and other electronic sources of information.

Unreturned, dilapidated and unusable books as well as obsolete units of the library holdings are being revised and written off.

The old holdings (books received by the library before 2000) are systematically entered into the COBISS.SR system. This is the ending of the 'hybrid' library period which offers a variety of information, both traditionally through books and printed periodicals and various web services and digital sources.

What would be the next steps?

We will keep following the concept of library development. We are going to use the existing librarian knowledge to meet the needs of users, as well as to speed up access to information. The following is expected in the coming period:

- We are going to use the digitisation method to protect the holdings and make them accessible to users;
- We are going to form an archiving repository, i.e. long-term storage of metadata of digital resources in an electronic storage;

- We are going to create a database of relevant electronic sources.

The library shall enter a phase of transformation from a library-information centre to a virtual library, i.e. an electronic library (as the most modern type of a library organisation).

LIBRARY PREMISES

The library premises are organised in three different segments.

The workspace for library staff with a six-seat professors' reading room, for the teaching staff of the Faculty and other scholars, as well as for readers who use periodicals, doctoral dissertations, material from the rarity holdings or books procured by interlibrary loan. This space enables free access to the reference collection, newly arrived serial publications, all issues of the Bulletin (from 1950 onwards) and all issues of the journal Forestry (since 1949).

The students' (general) reading room has 50 seats, for users who use books to work in the reading room and for all who have the need to use manuals, dictionaries, bibliographies, encyclopedias, lexicons, etc. Computers are also available to users in this area.

The warehouse (over 200 m^2) with publications arranged on shelves by fields. Because of the new supplies of library holdings, new metal shelves were procured and the existing space was redesigned and expanded by a new usable area of 60 m^2 .

LIBRARY HOLDINGS

The holdings are replenished (by purchase, gift, exchange and obligatory local copy), monographs, serial and electronic publications, primarily from the fields studied at the Faculty of Forestry, but also from other related scientific disciplines.

The increase of the holdings was also contributed by the purchase of foreign professional literature for the needs and by the choice of teachers and associates, as well as by the procurement of publications through two international projects, TEMPUS and FOPER in the 2008–2011 period.

The library holdings contain:

Monographs (scientific and professional books from different fields) with specific holdings (special collections):

- The museum collection (publications intended for teaching, which were published by the Faculty of Forestry, as well as course packets used for exam preparation until 2000 and 11 textbooks published by 1940, which were used by students of the Forestry Department at the Faculty of Agriculture and Forestry);
- The rarity holdings (old and rare books printed at the end of the XIX century, mostly in German, as well as the first book in the field of forestry entitled Production and Use of Forests by Aleksa Stojković published in Belgrade in 1872);
- The holdings of defended theses (doctoral dissertations, master of science theses, specialist papers and master's theses defended at the Faculty of Forestry in Belgrade);
- The student holdings (textbooks and practicums needed by students for all study programmes at the Faculty of Forestry);
- The gift library (libraries donated by professors who taught at the Faculty of Forestry are kept as separate units);
- Reference collection holdings (reference books include encyclopedias - general and special, lexicons, dictionaries, bibliographies, manuals, atlases and other capital editions in the Serbian language and foreign languages);

Serial publications (domestic and foreign journals; scientific and professional journals).

Non-book material

- A collection of photographs of Stevan Kolarović, Forest Engineer, who devoted his whole life to the forests and forestry of Serbia and left behind valuable photographs of both significant tree species and forests of Serbia, Montenegro and Macedonia.
- Digital material
- Databases obtained within the KoBSON project, among others the TREE CD databases for the period from 1939 to 2001 on a CD for the journals: Forestry abstracts, Forest products abstracts and Agroforestry abstracts.

PROFESSIONAL LIBRARY STAFF

Managers of the Faculty of Forestry Library

- Sofija Stošić-Vujanović - in the Library from 1957 to 1980
Higher education: Faculty of Philology, Belgrade
Professional exam: 1954
- Milorad Šijak, librarian advisor - in the Library from 1980 to 1996
Higher education: Faculty of Forestry, Belgrade
Professional exam: 1979
- Branislava Simonović - in the Library since 2002
Higher education: Faculty of Forestry, Belgrade
Professional exam: 2004

Graduate librarians

- Milica Milojević - in the Library from 1960 to 1991
Higher education: Faculty of Science and Mathematics, Belgrade
Professional exam: 1962
- Pešić (Mihailović) Nevena - in the Library from 2010 to 2015
Higher education: Faculty of Philology, Belgrade
Professional exam: 2009
- Gordana Radošević - in the Library since 2010
Higher education: Faculty of Forestry, Belgrade
Professional exam: 2011
- Tatjana Pavličić - in the Library since 2015
Higher education: Faculty of Forestry, Belgrade
Professional exam: 2016

Librarians

- Simeon Rajačić – also known as Uncle Sima - in the Library from 1955 to 1967
Secondary education: Grammar school
- Radica (Simić) Kovačević - in the Library from 1960 to 1977
Secondary education: Secondary librarian school, Belgrade
Professional exam: 1962
- Branislava Lukić (Milinkov), independent librarian - in the Library from 1960 to 2000
Secondary education: Secondary librarian school, Belgrade
Professional exam: 1962
- Mirjana Golubović, independent librarian - in the Library from 1977 to 2012
Secondary education: Secondary librarian school, Belgrade
Professional exam: 1979
- Jelena Vilotić, librarian - in the Library since 2013
Secondary education: Grammar school, Obrenovac
Professional exam: 2013



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Library staff

- Milan Ilić, Graduate Forest Engineer – worked in the Library from 1955 to 1957
- Teodor Srdanović - Student, worked in the Library from 1955 to 1957
- Branka Vančetović - Student - worked in the Library from 1958 to 1959
- Verica Drašković - Graduate Politicologist, worked in the Library from 1998 to 2000
- Branka Ilić, Faculty of Philology - worked in the Library from 2000 to 2002
- Slaviša Šarenac, employed at the Faculty from 1980 to 2016, a professional associate for photo documentation, Higher education: Faculty of Forestry, Belgrade



46 Students' Reading Room

47 Professors' Reading Room

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Publishing

As far back as in the first few years of work of the Faculty of Agriculture with the Forestry Department, started the publishing of textbooks. The name of the Faculty of Agriculture and Forestry appeared for the first time in 1930, when Dr. Đoka Jovanović, professor of forest exploitation, published a textbook entitled Mechanical Wood Processing, and Dr. Mladen Josifović the textbook Plant Pathology for Forestry Students and Professionals. Until the beginning of World War II, a total of 11 textbooks and one course packet were published. The Faculty did not publish any textbooks during the war.

After World War II, everything changed. In addition to the textbooks which were at first common to both departments of the Faculty of Agriculture and Forestry, such as Inorganic and Organic Chemistry, Soil Science, etc. the publishing of textbooks for forestry students was also initiated. In 1947, textbooks were published in Microbiology and Higher Mathematics, and in 1948 textbooks in Dendrometry, Forest Entomology and Mechanical Wood Processing. In 1948, course packets were published for the subjects Construction, Torrent Control, etc. With the development of forest science and practice, the need grew for the publication of appropriate textbooks and other necessary literature, especially since the formation of new departments. So, a multitude of publications, practice books, handbooks and exercise books were therefore published.

The publishing activities of the Faculty also included four bibliographies of scientific and professional articles of the teaching staff of the Faculty of Forestry in Belgrade, for the following periods: 1945–1980, 1981–1985, 1920–1990, 1986–1990 and 1920–1990 with supplements. By editions, these bibliographies contain, 4,390, 1,469, 1,485 and 753 bibliographic units, respectively, i.e. a total of 8,097 bibliographic units.

Each title, i.e. bibliographic unit, also has a title in English in addition to the original title. Each bibliography has the authors'

Text drawn up by:
Dr. Miodrag Zlatić, Full Professor

register and the subject matter register in Serbian and English, and the first two also contain short biographies of the authors. In 1993, the Faculty published A Bibliography of Projects of the Faculty of Forestry 1948–1990 - book. 1, mono-thematic projects 1948–1972, which contains 366 project-documents (determinants). This bibliography included projects whose participants were members of the teaching staff of the Faculty, and those related to significant projects in the economy of our country (and several abroad).

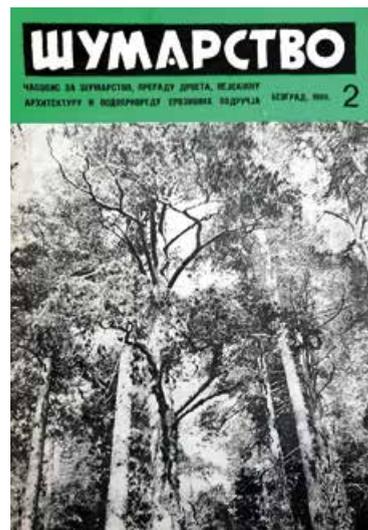
The activity of publishing at the Faculty is implemented by: the dean with the collegium, the Publishing Commission, editors and editorial boards of permanent or occasional publications of the Faculty and the Accounting and Finance Service.

The Publishing Commission has at least four members appointed by the Teaching-Scientific Council from the rank of teachers for a period of three years. Currently, this duty is being performed by:

- Dr. Mira Mirić Milosavljević, President of the Commission;
- Dr. Ivana Bjedov, Deputy President;
- Dr. Marijana Novaković Vuković, Member;
- Dr. Vesna Đukić, Member of the Commission.



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48 Bulletin
of the Faculty
of Forestry

49 Journal
Forestry

JOURNALS

Bulletin of the Faculty of Forestry

After and during World War II, until 1949, the teaching staff of the Faculty of Forestry published their articles in the Yearbook of the Faculty of Agriculture and Forestry. After the separation of the Faculty of Forestry, publishing of its own publications was initiated, and so the Bulletin of the Faculty of Forestry was created. The first issue was published in 1950, and a total of 121 issues have been published so far.

This journal has made a significant contribution to the development of forestry in former Yugoslavia and today in Serbia, but also to the development of wood processing, landscape architecture and horticulture, erosion and torrent control (today ecological engineering in the protection of soil and water resources). Some doctoral dissertations were published in the Bulletin as well as one Master of Science thesis (issue 56).

Today, Bulletin of the Faculty of Forestry is a leading national journal, which is published periodically, twice a year. Original and review scientific articles are published, elaborating on issues from the mentioned fields. Papers are published in Serbian and English. Since 2002, all papers published in the Bulletin of the Faculty of Forestry have a DOI number.

The Bulletin is exchanged with 35 domestic and 104 foreign institutions. It is indexed by the following bibliographic databases: CAB Abstract, AGRIS, Tree CD, AGRICOLA, Forest Science Database, CABI Full Text, EBSCO, DOAJ and PROQUEST. Bulletin of the Faculty of Forestry is financially supported by the Ministry of Education, Science and Technological Development of the Republic of Serbia.

The editor-in-chief of the first issue of the journal was Prof. Dr. Svetislav Živojinović (1950–1956). Followed by Dr. Toma Bunuševac (1956–1959), Prof. Dr. Danilo Todorović (1959–1965),

Prof. Dr. Vladislav Popović (1965–1968), Prof. Dr. Branislav Jovanović (1968), Prof. Dr. Dušan Simeunović (1970–1975), Prof. Dr. Milovan Gajić (1976–1992), Prof. Dr. Dušan Jović (1994–2000), Prof. Dr. Milan Nešić (2000–2002), Prof. Dr. Dragan Karadžić (2002–2009), Prof. Dr. Nenad Keča (2009–2013) and since 2014 Prof. Dr. Miodrag Zlatić.

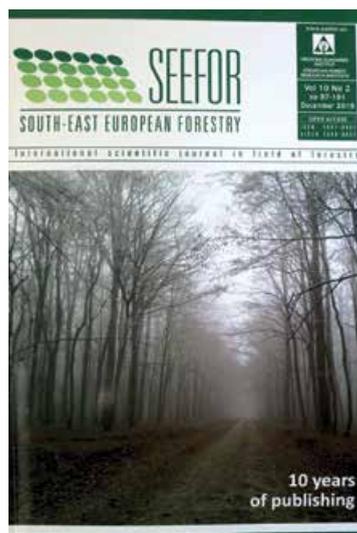
Forestry

The journal Forestry was first published in 1948, as a Bulletin of the Ministry of Forestry of the Federal People's Republic of Yugoslavia, and its first editor was Đorđe Jović, Graduate Engineer. By decision of the Association of Forest Engineers and Technicians of Serbia of 25th February, 1951, Forestry became the journal of this association. Later on, the Faculty of Forestry became a co-publisher of Forestry which lasted until 2019. During this period, about 300 volumes and about 3,500 papers were published. During its publishing history, the journal Forestry dealt with the topics of forestry, hunting, landscape architecture, erosion control and wood processing. Most of the published papers have scientific-research character, but a large number of reviews, comments and articles were also published in this journal. The journal was printed four times a year in 600 copies, and in addition to domestic scientific and professional staff who cooperated with the journal, scientists from several foreign countries contributed to its work.

In addition to the above mentioned, the editors-in-chief of the journal Forestry were: Albe Urbanovski (1954), Dušan Simeunović (1956–1957), Rajica Đekić (1957), Radovan Ivković (1958–1962), Dragoljub Mirković (1962–1963), Miloš Jevtić (1964–1967), Stevan Jovanović (1968–1973), Milutin Jovanović (1973–1979), Pribislav Marinković (1980–1985), Sreten Nikolić (1986–1997), Zoran Tomović (1997–2002) and Ljubivoje



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51

50 Journal
Wood Processing

51 Journal SEEFOR

Stojanović (2002–2019). It should be pointed out here that Milutin Vujović, a journalist, took the position of the technical editor in the period from 1952 to 1997, i.e. for 45 years.

Wood Processing

Wood Processing was a scientific and informative journal which published original, review and professional articles in the field of wood processing and related disciplines. In addition to the presentation of articles, the journal also contains a large number useful information, reports, news, novelties and advertisements. The content of this journal is directed towards scientists, professionals working in practice, students and many others who study or process wood not only in Serbia, but all over the world.

The journal was published by the *University of Belgrade - Faculty of Forestry* from 2003 to 2011. At first, it was published four times a year and later biannually. The articles were published in Serbian or English, and the total number of issues is 35.

SEEFOR

The Faculty of Forestry is one of the publishers of the scientific journal SEEFOR (South-East European Forestry), ISSN Abbreviated title: South-east Eur. for.; ISSN: 1847–6481 (print); e-ISSN: 18490891 (online).

The editor-in-chief is Dijana Vuletić. The executive editor is Ivan Belanović, and the editorial board consists of 28 experts from abroad and Serbia.

The publishing of this journal is supported by the following universities and institutes from the Balkans: the Croatian Forestry Institute, the University of Banja Luka – Faculty of Forestry and the University of Sarajevo - Faculty of Forestry; University of Novi Sad - Institute of Lowland Forestry and the

Environment; University of Belgrade – Faculty of Forestry; Institute of Forestry, Belgrade; University Cyril and Methodius, Skopje, Northern Macedonia.

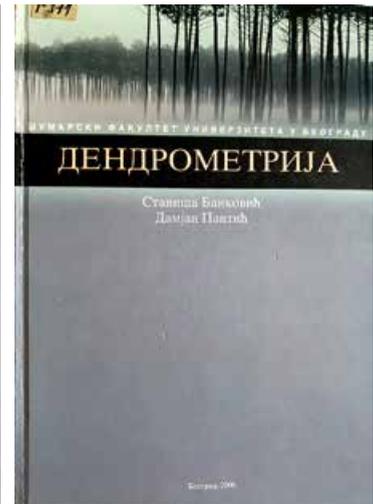
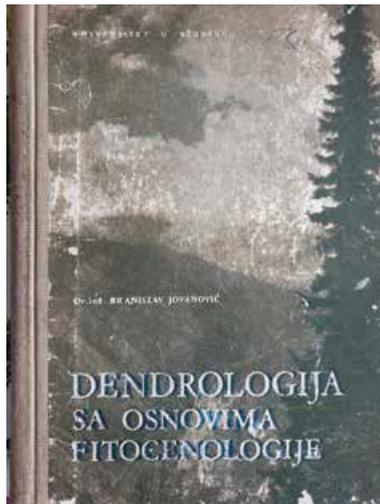
The main publisher, i.e. the editorial office, is in the Croatian Forestry Institute in Jastrebarsko.

The first issue of the journal SEEFOR was published in 2010. The journal is published twice a year and ten volumes with two issues have been published so far, which makes a total of 20 published issues in ten years. The journal is available in both the printed and electronic version, and is indexed by the following indexing databases: CAB Abstracts, DOAJ, Web of Science Core Collection (ESCI), Google Scholar, Scopus (Elsevier).

TEXTBOOKS

The first relevant textbook was printed at the Faculty of Agriculture and Forestry in 1927. It was a textbook entitled Soil Science by Aleksandar Stebut. Before World War II, 12 textbooks were published, some of which were common textbooks based on common subjects (Soil Science, Chemistry, Botany). A total of 17 textbooks were published after the separation of the Faculty of Forestry from the Faculty of Agriculture, in the period from 1947 to 1957. These were textbooks in basic forest disciplines: Forest Entomology, Microbiology of Forest Soils, Forest Phytopathology, Fundamentals of Forest Management, Dendrometry, Forest Exploitation, Forest Transportation Facilities, etc.

So far, the Faculty has published over 700 textbooks, course packets, practice books, handbooks and monographs, of which four selected items are displayed below for each department.



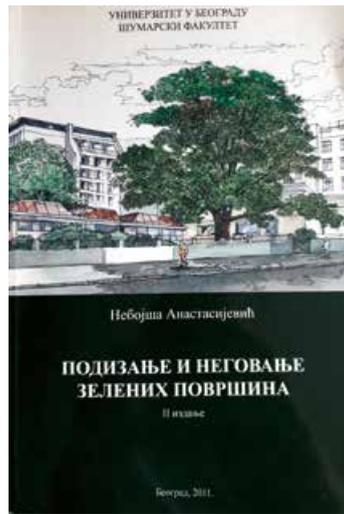
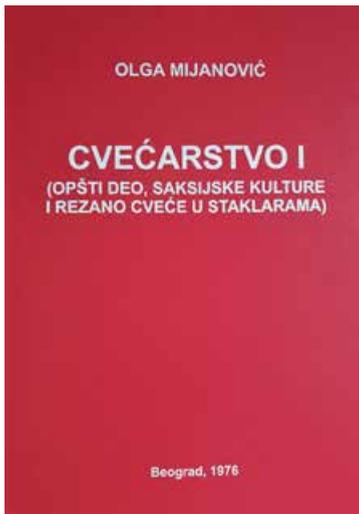
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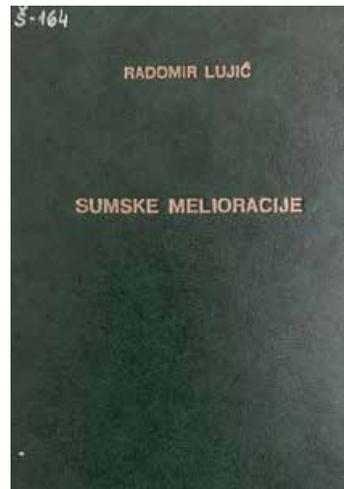
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52 Forestry Department

53 Department of Wood Science and Technology



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54 Department of Landscape Architecture

55 Department of Ecological Engineering for Soil and Water Resources Protection

Curricula and Educational Programmes

The first Decree of the Faculty of Agriculture which prescribes courses (scientific and professional) taught in the Forestry Department of the Faculty of Agriculture was adopted on February 11, 1921. According to that regulation, the schedule of courses by semesters and years of study, as well as the content and scope of teaching, are prescribed by the Faculty Council before the beginning of each semester. All courses are classified into three groups: basic, professional and ancillary courses. The group of basic courses consists of Mathematics, Inorganic and Organic Chemistry, General Botany, General Zoology, Experimental Physics and Mechanics, Mineralogy and Petrography, Geology, Meteorology and Climatology, National Economy and Finance, and Basic Geodesy. The group of professional courses consists of the following 23 courses - Agricultural Chemistry, Forest Chemical Technology, Specific Botany for Foresters and Farmers, Plant Pathology, Anatomical Structure of Trees, Applied Zoology for Farmers and Foresters, General Entomology with the Science of Agricultural and Harmful Insects, Soil Science, Science of Forest Establishment and Tending, Science of Forest Management, Science of Forest Utilisation, Science of Forest Protection, Calculation of Forest Values, Dendrometry, Forest Policy, Forest Administration and Forestry Accounting, the Forest Law with Special Regard to our Forest Legislation, Forest Construction with the Construction of Roads and Bridges, Torrent Control and Forest Soil Strengthening, Plantation Technique, Wildlife Management, Forestry History and Fisheries. In the group of ancillary courses are - the Introduction to Forestry Studies, Agricultural Encyclopedia, Technical Drawing and First Aid in Case of Accidents.

The Law on Universities of June 28, 1930 stipulated that the University of Belgrade has six faculties, among which is also the Faculty of Agriculture and Forestry. Based on this law, the Decree of the Faculty of Agriculture and Forestry was passed

according to which the courses taught at this Faculty are divided into two groups - the courses that are common to both departments (14 courses) and those taught only in the Forestry Department (18 courses).

After World War II, the first generation of students was enrolled in the academic year 1945/46. They could opt for one of the two educational streams - Forest-Silvicultural or Forest-Industrial stream, and a total of 27 courses were taught in each educational stream.

According to the first Statute of the Faculty of Forestry from 1956, the Faculty had two departments, the Forestry Department (34 courses) and the Wood-Industrial Department (33 courses). The 1960 Statute introduced great changes in the areas for which engineers were trained. Classes were taught in five departments - the Forestry Department, the Department of Residential Greening, the Department of Erosion and Torrent Control, the Department of Mechanical Wood Processing and the Department of Chemical Wood Processing.

In the following period, classes were reorganised, as well as the number of exams and the way of taking the exams. According to the 1967 statute, there were four departments at the Faculty - the Department of Forestry (31 professional courses in its curriculum), the Department of Wood Industry (27 professional courses), the Department of Horticulture (28 professional courses) and the Department of Erosion Control and Soil Reclamation (26 professional courses). In all departments students were required to write a graduation paper and defend it. The same number of departments has remained to this day with their names and curricula being repeatedly changed.

By signing the Bologna Declaration, which has been in force in Serbia since 2005, a modified system of studies was established, which involves three study cycles. The first one

Text drawn up by:
Dr. Vesna Golubović Čurguz,
Associate Professor

includes undergraduate academic or vocational studies, the second cycle are master's degree or master vocational studies and the third cycle are doctoral studies. The European Credit Transfer System (ECTS credits) was introduced for each study level. The Faculty of Forestry reformed the curricula and programmes adjusted to the current legislation with a clear commitment to improving the quality of all curricula and scientific and research activities. The study programmes were accredited for the first time according to the requirements of the Bologna Declaration in 2008. Four programmes of undergraduate academic studies were accredited (Forestry, Wood processing, Landscape Architecture and Horticulture, Ecological engineering for Soil and Water Resources Protection), a joint master's degree programme (Master's degree studies - Forestry, Wood Processing, Landscape Architecture and Horticulture and Ecological Engineering for Soil and Water Resources Protection) and a joint programme of Doctoral Academic Studies (Doctoral studies - Faculty of Forestry).

According to the 2013 Statute, the teaching-scientific activities of the Faculty of Forestry are organised through the following departments: the Department of Forestry; the Department of Technologies, Management and Design of Furniture and Wood Products; the Department of Landscape Architecture and Horticulture; the Department of Ecological Engineering for Soil and Water Resources Protection. During the same year, i.e. in 2013, a new accreditation process was completed. Four undergraduate academic study programmes were accredited (Forestry, Technologies, Management and Design of Furniture and Wood Products, Landscape Architecture, Ecological Engineering for Soil and Water Resources Protection). These studies last for four years and students earn 240 ECTS credits by taking the exams. Another accredited programme is the programme of undergraduate vocational studies in Furniture and Wood Products Technologies, which lasts for three years and students earn 180 ECTS by taking the exams. Master's degree academic studies are organised as four programmes (Forestry, Technologies, Management and Design of Furniture and Wood Products, Landscape Architecture and Ecological Engineering for Soil and Water Resources Protection). These studies last for one year and the students earn 60 ECTS credits. Doctoral studies at the Faculty of Forestry are organised as a single study programme with four modules (Module 1 - Forestry, Module 2 - Technologies, Management and Design of Furniture and Wood Products, Module 3 - Landscape Architecture and Module 4 - Ecological Engineering for Soil and Water Resources Protection). Within the module of Forestry students opt for one out of seven submodules (Submodule 1 – Seed Science, Nursery Practice and Afforestation, Submodule 2 - Forest Protection, Submodule 3 – Forest Economics and Organisation, Submodule 4 - Forest Management Planning, Submodule 5 – Forest Utilisation and Hunting with Wildlife Protection, Submodule

6 - Ecology, Protection and Improvement of the Environment, Submodule 7 - Silviculture).

Within the module Technologies, Management and Design of Furniture and Wood Products students opt for one out of the six submodules (Submodule 1 - Timber Trade and Wood Industry Economics, Submodule 2- Furniture and Wood Products, Submodule 3 - Chemical-Mechanical Wood Processing, Submodule 4 - Machines and Apparatuses in Wood Processing, Submodule 5 - Primary Wood Processing, Submodule 6- Wood Protection). Regardless of the selected module (submodule) students take two compulsory (common) courses: Methodology of Scientific Research and Techniques of Scientific Research, as well as electives from a list adopted for each module (submodule). Doctoral studies last for three years and students earn 180 ECTS credits by taking the exams. In this cycle of accreditation, a Programme of Specialist academic studies - Trade in Wood and Wood Products was also accredited. It lasts for one year, and students earn 60 ECTS credits by taking the exams.

The last Statute of the Faculty was adopted in 2019, and teaching at the Faculty takes place in four departments (Department of Forestry, Department of Wood Science and Technology, Department of Landscape Architecture and Horticulture, Department of Ecological Engineering for Soil and Water Resources Protection). There are four programmes of undergraduate academic studies (Forestry, Wood Science and Technology, Landscape Architecture, Ecological Engineering for Soil and Water Resources Protection). In the undergraduate academic study programme of the Department of Forestry, students are required to pass 33 compulsory courses, 10 elective courses, choose one out of 4 from the group foreign languages 1 and foreign languages 2. In the end, the students need to write and defend their graduation paper. In undergraduate academic studies in the study programme of Wood Science and Technology students take 43 exams, of which eight are elective courses, four are professional practice and one is the graduation paper. In the study programme Landscape Architecture students attend a total of 52 courses, of which 41 are compulsory courses and 11 are electives. In the study programme of Ecological Engineering for Soil and Water Resources Protection in undergraduate academic studies students take exams in 43 compulsory courses and eight exams in 16 electives. These studies last for four years (240 ECTS credits).

The undergraduate vocational studies of Wood Science and Technology last for three years and students obtain 180 ECTS credits by taking the exams. Within this study programme, students take 22 exams, 8 of which are elective and the graduation paper is compulsory.

The Master's degree academic studies are organised as four programmes in the Serbian language (Forestry, Wood Science and Technology, Landscape Architecture, Ecological Engineering for Soil and Water Resources Protection) and they

last for one year (60 ECTS credits). In the master's degree academic studies of forestry student opts for one out of seven elective groups (modules): Module 1 - Plant Production and Conservation of Forest Genetic Resources; Module 2 - Ecology, Protection and Improvement of the Environment; Module 3 - Silviculture; Module 4 - Forest Protection; Module 5 - Utilisation of Forest and Wildlife Resources; Module 6 - Forest Management Planning; Module 7 - Bioeconomy, Policy and Governance in Forestry and Nature Conservation.

A list of elective courses is given for each elective group from which the student chooses one or two courses. In the Master's degree studies students attend three or four one-semester compulsory courses and one or two elective courses, whereby one compulsory course is common for all elective groups and 11 elective courses of electoral groups (for all seven elective groups), out of a total of 34 offered courses. In Master's degree academic studies of Wood Science and Technology students attend one one-semester compulsory course and four elective courses. The Master's degree academic studies of Landscape Architecture are conducted within a study programme which lasts for one academic year or two semesters. At enrollment a student opts for one of the following three modules: Landscape Management and Nature Conservation, Landscape Engineering and Planning and Design in Landscape Architecture. Within each module, students attend one compulsory course of the module and three electives. The Master's degree academic studies of Ecological Engineering for Soil and Water Resources Protection are organised through three modules: Module 1 - Protection of Water Resources of Hilly and Mountainous Areas; Module 2 - Degradation and Protection of Soil Resources; Module 3 - Management of Sustainable Development in Degraded Areas. At enrollment students choose the module/elective group. Within each module

students can take up to five compulsory courses, i.e. up to three electives.

For the first time, Master's degree academic studies in the English language are being organised at the Faculty (Master of Forestry and Natural Resources Management), which last for two years (120 ECTS credits).

Doctoral academic studies are organised as four study programmes (Forestry, Wood Technologies, Landscape architecture, Ecological engineering for Soil and Water Resources Protection). The doctoral study programme of Forestry has seven modules: Forest Genetic Resources and Biotechnology, Forest Ecology, Protection and Environmental Improvement, Silviculture, Forest Protection, Utilisation of Forest and Hunting Resources with Wildlife Protection, Forest Management Planning, Bioeconomy, Policy and Governance in Forestry and Nature Conservation. The study programme of doctoral studies in Wood Science and Technology contains five modules. Doctoral study programmes of Landscape Architecture and Ecological engineering for soil and water resources protection are organised as single study programmes (they do not have modules). Doctoral studies last for three years (180 ECTS credits). Regardless of the chosen study programme, students take two compulsory courses in the first term – the Methodology of Scientific Research and Technique of Scientific Research. In addition to these compulsory courses, in the following semesters doctoral students choose compulsory and elective subjects from the course list of the selected programme (module).

Scientific Research and International Cooperation

The beginnings of scientific research in the field of forestry are related to 1920 and the founding of the Faculty of Agriculture in Zemun, where Forestry was organised as one of the departments. At that time, research activities took place primarily within the Institute of Forestry, in addition to other three institutes which operated at that time. After the first reorganisation in 1932, when the Faculty of Agriculture changed its name to the Faculty of Agriculture and Forestry, scientific research was performed through five institutes, which were dealing with forestry issues, and common cabinets for agriculture and forestry. The task of scientific research at the time was the improvement of forest science in general and exploration of those issues that were significant to the forestry practice. In addition to the Faculty staff, professionals from forestry practice also participated in the research, which was in total just over 20 people, appearing as authors of a total of 317 articles written in the 1920–1944 period. As a result of independent scientific research, the first doctoral dissertation entitled Entomological Monograph of the University Domain Majdanpek was written by Svetislav Živojinović and defended at the Faculty of Agriculture and Forestry on 13th November, 1940.

After the liberation in 1945, scientific research took place within the Forestry Department, because the Forestry Institute was not renewed. Until the establishment of the independent Faculty of Forestry in 1949, a total of 63 scientific and professional articles were published, which mostly dealt with specific forestry issues and slightly less with wood-industrial issues.

With the establishment of the independent Faculty of Forestry, much more favourable conditions for the development of scientific research were created, which was then already taking place in different fields: forestry, wood processing and erosion control. Post-war regulations define the framework of

Text drawn up by:
Dr. Mirjana Šijačić-Nikolić,
 Full Professor

the independent scientific research through teaching for scientific improvement and preparation of doctoral dissertations, which lasts for four semesters and includes oral exams and written work in the field for which the candidate is preparing for independent scientific work. According to the 1956 statute, a doctorate can be done in 21 scientific disciplines as major subjects. In the period until 1960, doctoral dissertations resulting from independent scientific research were defended by the following candidates: Milutin Knežević (1951), Branislav Jovanović (1953), Dušan Simeunović (1954), Branislav Pejovski (1954), Toma Bunuševac (1954), Konstantin Vasić (1955), Dragoljub Mirković (1956), Dragomir Milojković (1956), Vladislav Popović (1956), Ljubomir Petrović (1956), Jovan Pavić (1956), Slobodan Gavrilović (1956), Dušan Oreščanin (1957), Ivan Soljanik (1957), Lazar Vujičić (1957), Milovan Gajić (1958), Radovan Ivkov (1959), Radomir Ljujić (1959), Danilo Todorović (1959), Milutin Simonović (1960) and Siniša Stanković (1960). This allowed for the forms and scope of scientific research after 1960 to be more extensive and diverse in character, and the new quality environment was created as a starting point for new staff training within the four departments.

During the one hundred-year period of work at the Faculty of Forestry, according to the old law, a total of 297 doctorates were written and defended, of which 159 in the Department of Forestry, 69 in the Department of Wood Processing, 33 in the Department of Landscape Architecture and Horticulture and 36 in the Department of Erosion and Torrent Control. During that period, a total of 435 students completed their Master's degree studies, of which 248 in the Department of Forestry; 76 in the Wood Processing Department; 56 in the Department of Landscape Architecture and Horticulture and 55 in the Department of Erosion and Torrent Control. Since the signing of the Bologna Declaration and the reform of studies

56 Laboratory for Biotechnology
founded in 2016



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at the Faculty of Forestry (Bologna 1, 2 and 3) in 2003, doctoral academic studies were completed by a total of 49 students of which 21 students of the study programme of Forestry, seven students of the study programme of Technologies, Management and Design of Furniture and Wood Products, eight students of the study programme Landscape Architecture and 13 students of the study programme of Ecological Engineering for Soil and Water Resources Protection. According to the latest accreditation, which is in progress (Bologna 4), doctoral studies at the Faculty of Forestry will be organised as four separate study programmes: Forestry with seven sub-modules; Landscape Architecture and Horticulture; Wood Technologies and Ecological Engineering for Soil and Water Resources Protection.

Today, the Faculty of Forestry is the oldest scientific research institution in the territory of the Republic of Serbia, with a 100 years long tradition. By a decision of the Ministry of Education, Science and Technological Development from 2020, it was accredited as a state scientific research institution in the field of biotechnical sciences - agriculture, forestry and fisheries.

The scientific research at the Faculty is implemented by 124 researchers, through individual activities or activities of project teams, dealing with fundamental, applied and developmental research in the fields of forestry, wood science and technology, landscape architecture and ecological engineering for soil and water resources protection.

The basis for scientific research are a number of laboratories and centres, which were formed at the Faculty of Forestry in the past period. According to the current 2019 statute, the Chairs and Departments of the Faculty have the following belonging laboratories and centres:

DEPARTMENT OF FORESTRY

Chair of Seed Science, Nursery Production and Afforestation

- Laboratory for Tree Anatomy
- Laboratory for Seed and Seedling Testing
- Laboratory for Biotechnology
- Centre for Forest Genetic Resources Monitoring and Conservation
- Centre for Afforestation and Artificial Forest Regeneration

Chair of Forest Ecology

- Laboratory for Dendrology and Phytocoenology
- Pedological Laboratory for Soil Chemistry
- Centre for Monitoring Forest Sites and Forest Ecosystems Floristic Diversity

Chair of Silviculture

- Centre for Silvicultural Data Monitoring, Collection and Processing
- Centre for Climate Change Monitoring in Forest Ecosystems

Chair of Forest Protection

- Laboratory for Forest Entomology
- Laboratory for Forest Phytopathology
- Forest Fire Research Centre

Chair of Forest Resources Utilisation

- Laboratory for Wildlife Management
- Forest Utilisation Laboratory
- Forest Utilisation Centre



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58

Chair of Forest Management Planning

- Laboratory for Geodesy and GIS
- Laboratory for Increment Research and Biomonitoring
- Centre for Monitoring, Inventory and Forest Management Planning

Chair of Bioeconomy, Policy and Governance in Forestry and Nature Conservation

- Centre for Forest Economics, Trade and Marketing (CETM)

DEPARTMENT OF WOOD SCIENCE AND TECHNOLOGY

Chair of Primary Wood Processing

- Laboratory for Wood Properties
- Laboratory for Hydrothermal Wood Processing
- Laboratory for Sawmill Wood Processing
- Laboratory for Veneers and Plywood
- Laboratory for Wood Anatomy

Chair of Machines and Apparatuses in Wood Processing

- Centre for Machines and Apparatuses in Wood Processing
- Centre for Computer Numerical Control (CNC) Machines in Wood Processing
- Laboratory for Tool Preparation and Sharpening
- Laboratory for Technical Physics and Measurement and Regulation Technics
- Centre for Biomass
- Laboratory for Machines and Apparatuses in Wood Processing
- Laboratory for Mechanical Engineering

Chair of Chemical-Mechanical Wood Processing

- Laboratory for Chemical Wood Processing and Chemistry
- Laboratory for Particleboards and Fibreboards Testing
- Laboratory for Adhesives and Coatings Testing
- Centre for Wood Composites, Paper and Bioprocess Engineering

Chair of Final Wood Processing

- Institute for Furniture Quality Control
- Laboratory for Surface Wood Processing
- Centre for Design and Engineering of Interior and Furniture

Chair of Wood Industry Management and Economics

- Centre for Wood Industry Marketing and Economics
- Timber Trade Centre
- Centre for Production Systems Organisation in Wood Processing
- Centre for Wood Processing Management

Chair of Wood Protection

- Laboratory for Wood Protection

DEPARTMENT OF LANDSCAPE ARCHITECTURE AND HORTICULTURE

Chair of Landscape Horticulture

- Laboratory for Plant Tissue Culture
- Seed Laboratory
- Laboratory for Chemotaxonomy
- Centre for Ornamental Plant Production



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Chair of Planning and Design in Landscape Architecture

- Centre for Landscape Planning and Design
- Landscape Laboratory

Chair of Landscape Engineering

- Laboratory for Landscape Engineering
- Centre for Sports and Recreational Facilities

DEPARTMENT OF ECOLOGICAL ENGINEERING FOR SOIL AND WATER RESOURCES PROTECTION

Chair of Torrent and Erosion Control

- Laboratory for GIS
- National Centre for Climate Change and Desertification

Chair of Soil Amelioration

- Laboratory for Soil Quality Monitoring
- Centre for Terrestrial Ecosystems Critical Loads Assessment

Chair of Erosion Control Geotechnics

- Geotechnical Laboratory
- Centre for Groundwaters of Forest Ecosystems

57 Pedological Laboratory
for Soil Chemistry

58 Laboratory for GIS
founded in 2019



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Scientific research at the Faculty of Forestry is mainly realised within the projects that are financed by: the Ministry of Education, Science and Technological development; the Ministry of Agriculture, Forestry and Water Management; the Ministry of Environmental Protection; Provincial Secretariat for Agriculture, Water Management and Forestry; the Secretariat for Environmental Protection of the City of Belgrade; PE Srbi-jašume; PE Vojvodinašume; PUC Zelenilo-Belgrade; national parks, municipalities, embassies, international organisations, and other sources, which was the case in the earlier period as well. From 2015 to 2020, a total of 170 national, bilateral and international projects were implemented at the Faculty.

In the past five years, as a result of scientific research, more than 300 articles have been published in international journals from the SCI list, of which 10 are papers in category M21a, 20 papers in journals of category M21 and 41 in journals of category M22, as well as 62 results in category M10, which speaks in favour of the quality of scientific research at the Faculty.

In addition, the Faculty was involved in different international projects and networks, such as: TEMPUS, FOPER, IPA, HORIZON 2020, Erasmus +, CEEPUS, COST, which have developed the international cooperation at the Faculty. Establishing, nurturing and development of cooperation with other universities in the country and abroad, as well as with international institutions and organisations engaged in scientific research and

59 Institute for Furniture
Quality Control

60 Laboratory for Chemotaxonomy,
a high-performance liquid
chromatography device

higher education issues, used to be and remains a permanent commitment of the Faculty of Forestry. Numerous agreements of cooperation concluded with partners from almost all continents are a proof of that. They are a basis for the exchange of students and teachers, exchange of acquired knowledge and experience, joint participation in projects and the like.

Currently, the University of Belgrade - Faculty of Forestry, has signed agreements of cooperation with various institutions from the following countries:

- Albania (Forest and Pasture Research Institute, Tirana; Agricultural University of Tirana, Faculty of Forest Sciences);
- Belarus (Belarusian State Technological University, Minsk)
- Bosnia and Herzegovina (University of Banja Luka, Faculty of Forestry; University of Sarajevo, Faculty of Forestry; University of Bihać, Technical Faculty);
- Great Britain (CABI International, Wallingford);
- Greece (University of Thessaly);
- Italy (Confindustria Udine);
- China (Beijing Forestry University);
- Hungary (University of Debrecen, Institute of Animal Science, Biotechnology and Nature Conservation);
- Germany (Albert Ludwig University of Freiburg, Institute for Landscape Management; Albert Ludwig University of Freiburg, Faculty of Environment and Natural Resources; University of Hamburg, Faculty of Mathematics, Informatics and Natural Sciences - Centre for Wood Science);
- Norway (Norwegian University of Life Science);
- Poland (Poznan University of Life Sciences);
- Romania (Stefan cel Mare University of Suceava);
- Russia (Moscow State Forest University, Faculty of Forestry; Volga State University of Technology, Faculty of Forestry and Ecology; Voronezh State University of Forestry and Technologies named after GF Morozov);

- Northern Macedonia (Faculty of Forestry, University of St. Cyril and Methodius);
- Slovenia (University of Ljubljana, Biotechnical Faculty; University of Primorska, Faculty of Management, Koper; Environmental Protection College, Velenje);
- Turkey (Kastamonu University Erasmus Office);
- Finland (European Forestry Institute; University of Eastern Finland)
- Croatia (University of Zagreb, Faculty of Forestry; Croatian Forest Research Institute);
- Czech Republic (Mendel University in Brno; Brno University of Technology);
- Switzerland (ETH Zurich).

As a prerequisite for attracting foreign students to the Faculty of Forestry, the first Master's degree study programme in English *Forestry and Natural Resources Management*, whose accreditation is in progress, was initiated in 2019.

The results of scientific research are presented in more detail at the level of chairs, with lists of the most important references and projects implemented in the past period. The chapters on specific chairs also elaborate on their cooperation with different institutions from this country and from abroad.

Student organising

Student organising at the Faculty of Forestry is as old as the Faculty itself. The Association of Students of the Faculty of Forestry in Belgrade was founded on December 4, 1923. Until then, students of the Faculty of Forestry were organised together with agronomists in the Association of Agricultural Students.

Since then, the forms of student organisation have changed, depending on the social circumstances, but the essence of their organisation has always been similar.

In the period between the two world wars, student organisation took place through joint actions of different political groups and individuals who were basically gathered around the same goals and meaning of the struggle: from the political point of view the struggle against fascism and the struggle for society democratisation, and at the university, for the defense of autonomy, improvement of expertise and raising of the scientific level of study, as well as the solving of many problems and troubles of economic nature. During that period, the First Congress of Students of Yugoslavia was held in Belgrade on September 4, 1940. The Congress concluded that the youth did not want the war and that young generations of the whole world will unite their forces in the fight against war, killing and destruction.

After the end of World War II, a Student Union was organised from the People's Youth of Yugoslavia, which carried out activities among students and had its own organisations and leadership at all faculties and universities.

In April 1951, the Union of Students of Yugoslavia was established, whose task was to take care of the general material conditions of students, participate in the management of student settlements, dorms and canteens, work on the organising of holidays, vacations and health care of students.

In November 1974, at the XI Congress of the Alliance of Socialist Youth of Yugoslavia, a single organisation - the Alliance

of Socialist Youth of Yugoslavia was formed from former organisations the Yugoslav Youth Association and the Yugoslav Student Union, and student organising took place within its framework.

During 1989, the idea of renewing the Student Alliance organisation was launched among students of the University of Belgrade. This way of student organising came to life and has been applied at the Faculty of Forestry since 1991.

Pursuant to the 2002 University Law, students were enabled to participate in the management of the University and Faculty, through the Student Parliament. Since the status, funding and competencies of the Student Parliament were not adequately regulated, its establishment was attempted at only a few faculties in the whole of Serbia.

The 2005 Law on Higher Education introduced the Student Parliament as a body of higher education institutions. In order to exercise the rights and protect the interests of students the Student Parliament elects and dismisses student representatives in the bodies of a higher education institution.

Currently, student participation in the management of higher education institutions and the improvement of teaching is greater than ever. Students have their vice-rector and their vice-deans at Faculties, the University Student Parliament and the Student Parliaments of the Faculties, as well as 20% of the members in University and Faculty authorities and bodies. In addition, students have their own student conferences at the national level - Student Conference of the Universities of Serbia (SKONUS) and the Student Conference of Vocational Academies.

The Student Parliament of the Faculty of Forestry was established in 2007. It is the organ through which students exercise their rights and protect their interests at the Faculty. Students have their representatives in all bodies of the

Text drawn up by:

Nikola Popović, Student Vice-Dean

61 A session of the Faculty of Forestry Student Parliament

62 A voluntary blood donation event at the Faculty of Forestry

63 A detail from a tournament game



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Faculty which make important decisions for student life and the way of studying of students at the Faculty. Bodies of the Faculty in which representatives of the Student Parliament participate are: the Faculty Council, the Teaching-scientific council, various commissions and bodies.

The student parliament is elected by students from all existing study programmes at the Faculty, enrolled for the first time in the ongoing academic year in which the election is made. Representatives for the Student Parliament are elected directly by secret ballot. The elections were for the first time held on 10 April, 2007.

The Student Parliament consists of 21 student members from all study programmes and years. One of the Student Parliament members is also the student vice-dean, who has the key role in the communication between the students and the Management Board of the Faculty. Among the activities of the student parliament are cooperation with other faculties, colleges, dormitories, as well as with all independent student organisations. The Student Parliament cooperates with professional and scientific organisations in order to most successfully achieve the set goals and tasks: a more efficient and better educational and scientific system, the improvement of conditions of studying, the improvement of student standards, better interfaculty cooperation, etc.

From 2007 to 2020, the Student Parliament of the Faculty of Forestry has had good cooperation with the management of the Faculty, which contributed to the improvement of teaching and student life at the Faculty. The Student Parliament took over the organisation of all student activities that used to be run by various student associations and communities in the past.

The Student Parliament of the Faculty of Forestry continues the tradition of student gathering and organising into

different societies, clubs, associations and sections, and it organises a large number of extracurricular activities of different types.

Omorika Mountaineering Club

The Omorika mountaineering club is considered the oldest of 27 associations of this kind in Belgrade, and again the youngest in terms of its members' age. It was founded in 1946 with the desire that students get to know the nature of their country in an organised way. By now, mountaineers have climbed a large number of the highest and most beautiful mountain peaks, and in addition to that, they got to know the history and culture of various regions.

Šumarac Photo-Cinema Club

The work of the photo club includes dealing with artistic and large format photography, whose technology changed over time. Initially, the club members were trained to operate the camera and take photos, while today their primary activity is the creation of artistic photography, as well as documenting student activities and all important events at the Faculty. Club members have organised numerous recognised exhibitions both at the Faculty and in other places.

Mirko Lavadinović Hunting Association

The Mirko Lavadinović hunting association is the first and the oldest student hunting organisation in Serbia. It was founded in 1952 as a hunting section of the students of the University of Belgrade - Faculty of Forestry. The initiative for the establishment of the hunting section was launched by students, who were already active hunters and members of hunting associations. Among the first members were brothers Dušan and Nikola Jović, Vinko Munkačević and Milorad Mijatović.



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Four years later (1956), the hunting association developed into a shooting team called Stevan Sindelić, which in time became a hunting group, then a hunting society, and finally a registered hunting association. In 1992, the association was renamed to its current name, as a sign of respect and remembrance of its member MSc. Mirko Lavadinović, who died tragically.

After the adoption of the statute on 18 December 2000, the Mirko Lavadinović hunting association, as a student association, became a full member of the Hunting Association of Serbia. In the past period the association has successfully gathered students, professors, assistants and non-teaching staff of the Faculty of Forestry. Until recently, it was a specific and unique organisation in the country, and perhaps beyond its borders, in terms of its student members and their love of nature, companionship, wildlife, shooting and hunting in general.

IFSA LC BELGRADE – Forestry Students’ Research Club

The Local office of the International Forestry Students’ Association, better known by the abbreviation IFSA, is located in Belgrade at the Faculty of Forestry. The local office in Belgrade (LC Belgrade) was founded in 1998/1999, and it was called Forestry Students’ Research Club. The internal organisation of IFSA LC Belgrade is in accordance with the Statute, and the full name of the organisation today reads IFSA LC BELGRADE - FORESTRY STUDENTS’ RESEARCH CLUB.

Through long-term cooperation with international and domestic organisations and institutions, IFSA LC Belgrade promotes and nurtures the tradition of the forestry profession and science and opens up various opportunities for students to travel and develop professionally, getting to know different cultures, nations and world-renowned organisations such as IUFRO, EFI, FAO and many others.



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Currently IFSA LC Belgrade has 35 members. The President of the local committee for 2019/2020 is Jovan Sremčević and the Vice-President is Srđan Vukašinović. Dolores Pavlović was the president of IFSA at the international level for the 2018/2019 period, while Mirjana Volarev is currently in the position of Head of the Forestry Education and Training Commission (2019/2020).

Voluntary blood donation

Twice a year the Student Parliament organises voluntary blood donation at the Faculty of Forestry in cooperation with the Blood Transfusion Institute of Serbia and students. The goal of the action is the promotion of blood donation, as well as informing of students about all segments of the safe blood chain and the importance of providing sufficient reserves. The number of student blood donors is continuously increasing.



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Mirko Lavadinović memorial futsal tournament

Traditionally, the Mirko Lavadinović memorial futsal tournament is organised every October on the terrains of the Faculty of Forestry, and the participants are students, professors, teaching assistants and guests.

In the fall of 2019, a Sports Day event was organised at the Faculty of Forestry for the first time, with over 200 student and professor participants who competed in over 13 sports disciplines, such as: futsal, basketball, table tennis, tug of war, forest all-around, disassembly of chainsaw, darts, table football, archery and other disciplines.

Student action “Your life is your deeds”

In recent years, the Student Parliament of the Faculty of Forestry has organised afforestation and cleaning actions called *Your life is your deeds*. These are the actions to be taken voluntarily by students of the Faculty of Forestry, and they go to places where they stay for a few days, do reforestation, clean nature and deal with restoration.

In the past period, actions called *Your life is your deeds* were organised in:

- 2015 – Mt. Tara (cleaning);
- 2017 – Mt. Stara Planina (cleaning and restoration);
- 2019 – Mt. Stara Planina (afforestation and restoration);
- 2019 - Belgrade (ecological workshop for the youngest age group);
- 2020 - Belgrade - Lipovačka forest (afforestation and cleaning).



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In addition, students of the Faculty of Forestry participated in the following humanitarian actions:

- 2014 - Major floods (Šabac, Belgrade, Obrenovac);
- 2015 - A gift for Nikola (over 20,000 RSD raised for the basic foods);
- 2016 – A lid for handicap (action still in progress);
- 2018 - Students for Martin (over 35,000 RSD raised);
- 2019 - Students for Magdalena (over 50,000 RSD raised).

Students of the Faculty of Forestry represent their Faculty at various events, such as the Festival of Science, Researchers’ Night, ECO yard (work with children) and promotion of the Faculty of Forestry.

They participate in international student exchanges and come back more experienced and full of enthusiasm to continue with their studies and share their experience with other colleagues.

As a member of the Student Parliament of the University of Belgrade, the Student Vice-Dean Nikola Popović, made a project called *Academic Integrity*. The project was exhibited at the University of Belgrade and presented to the Senate of the University of Belgrade.

In the future great project of the Alliance of Seven Universities of Europe called Circle-U the University of Belgrade will be represented by the student vice-dean of the Faculty of Forestry.

In the year of the great jubilee of the Faculty of Forestry, the Student Parliament continues with the implementation of planned afforestation, nature cleaning and restoration actions, the promotions of various study programmes, humanitarian work and provision of support to all students of the Faculty.



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64 Archery in the Arboretum

65 Tug of war

66 Students on Mt. Stara Planina in 2019

67 Students during one of the *Your life is your deeds actions*

68 Student Vice-Dean Nikola Popović hands over humanitarian aid raised by students of the Faculty of Forestry for Magdalena Marković



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69, 70, 71,72 Students of the Faculty of Forestry at the 2019 Science Festival attended by students of all four Faculty of Forestry departments

73 Academic Integrity displayed in the Hall of the Faculty of Forestry



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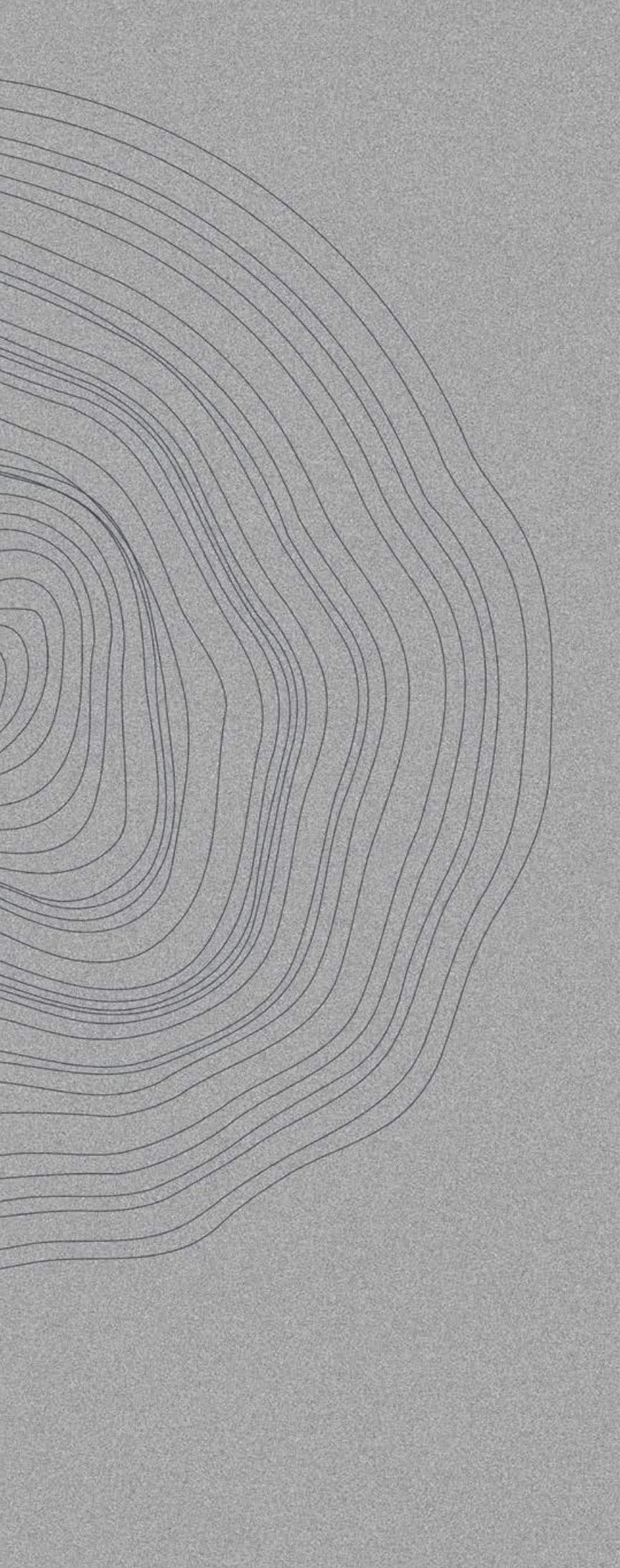


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74 A Circle-U Seminar
in Paris in 2020

75 Faculty of Forestry Student Parliament
in the Faculty hall





DEPARTMENT OF FORESTRY

Text drawn up by:

Dr. Rade Cvjetičanin, Full Professor

Dr. Olivera Košanin, Associate Professor

About the Department

Classes at the Faculty of Agriculture in Belgrade began on December 5, 1920, and 45 students were enrolled in the first generation, of which 36 in the Department of Agriculture and 9 in the Forestry Department. From the first enrolled generation of students in the Forestry Department, the first student who graduated in 1924 was Dimitrije Jovičić. On December 5, 1920, when the first generation of students were enrolled, the Department of Forestry was officially established, and that day is celebrated as the Day of the Faculty of Forestry. By a special Decree of the Faculty of Agriculture of 11 February, 1921, subjects taught at the Forestry Department were classified into three groups: basic subjects (10), professional subjects (23) and auxiliary subjects (4). According to the Decree of the Faculty of Agriculture of 21 September, 1924, there was no more division into basic, professional and auxiliary subjects, but there was a single list of subjects.

According to the Law on Universities of June 28, 1930, the Faculty of Agriculture and Forestry was listed among the six faculties of the University of Belgrade. The word 'Forestry' was mentioned here for the first time in the name of the Faculty in addition to 'Agriculture'. Based on this law, the 1932 Decree on the Faculty of Agriculture and Forestry was drafted, in which the prescribed subjects that are taught at the Forestry Department were divided into two groups: those common to both Departments (14) and subjects taught only in the Forestry Department (18).

In April 1941, at the beginning of World War II, the Faculty stopped with teaching and work. The first post-war generation of the Forestry Department was enrolled in two educational streams: the Silvicultural stream and Forest-industrial stream. The number of courses taught in both streams was 27. By the Decree of the Government of the People's Republic of Serbia of 5 February, 1949, two separate faculties were founded: the Faculty of Agriculture and the Faculty of Forestry.

In the academic year 1952/53 the Silvicultural and Forest-industrial streams were abolished and the General stream was reintroduced, while classes were extended to nine semesters, with the tenth semester scheduled for the preparation of the thesis. Based on the first Statute of the Faculty of Forestry of 1 October, 1956, the Wood-Industrial Department was established at the Faculty of Forestry in Belgrade in addition to the Forestry Department. By decision of 4 January, 1960, the Forestry Department was one of the five departments of the Faculty of Forestry.

According to the 1966 Statute, applied from October 1, 1967, the Department of Forestry was one of the four departments of the Faculty of Forestry, because the Department of

Chemical Wood Processing was transferred to the Faculty of Technology of the University of Belgrade in 1963. According to the Statute of 21 December, 1973, the departments became institutes, so the Department of Forestry became the Institute of Forestry - one of the four institutes of the Faculty of Forestry. According to the Statute of April 5, 1988, the Faculty of Forestry was again a single organisation with four Departments: Forestry, Wood Processing, Landscape Architecture and Erosion Control.

According to the 2002 Statute, as well as according to the 2011 Statute and the latest one from 2019, the Department of Forestry is one of the four departments of the Faculty of Forestry and to this day it has not changed its name. There are 7 Chairs in the Department of Forestry, namely: the Chair of Seed Science, Nursery Production and Afforestation, the Chair of Forest Ecology, the Chair of Silviculture, the Chair of Forest Protection, the Chair of Forest Resources Utilisation, the Chair of Forest Management Planning and the Chair of Bioeconomy, Policy and Governance in Forestry and Nature Conservation.

From the beginning of work of the Faculty of Forestry, in the period from 5 December, 1920 to 26 August, 2019, 5,037 students graduated from the Department of Forestry, of which 4,711 students belonged to the old system of studies, and 326 students to the Bologna system. In the same period, 248 students graduated from Master of Science studies and 266 from Master's degree studies. A total of 180 students earned their doctoral degree in the Forestry Department, of which 159 belong to the old system of education, and 21 to the Bologna system of studies. Today, the Department of Forestry has 57 employees, of which ten are full professors, 11 associate professors, nine assistant professors, two PhD teaching assistants, four teaching assistants, four researchers, 15 associates in higher education and three professional- technical associates for work in laboratories.

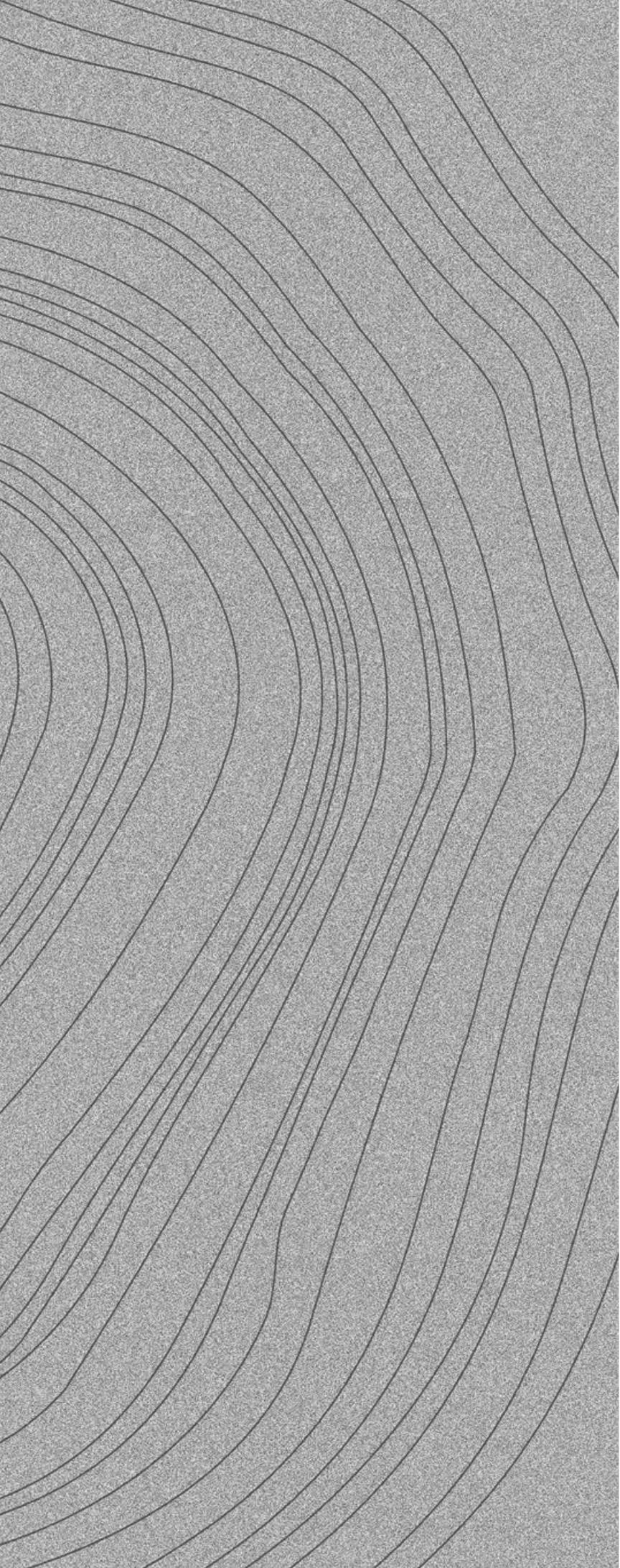
During the past one hundred-year period and for the needs of performing the teaching process in the Department of Forestry the following publications were written and published: 106 textbooks, 51 course packets, 128 practice books, handbooks and workbooks and 14 monographs. Impressive results have been achieved in the field of scientific research and professional work. The total number of references of the staff members of the Department of Forestry, since its establishment until today, amounts to over 8,000 scientific and professional papers, i.e. in the period from 1920 to 1995 up to 5,000 references, and from 1996 to 2019 over 3,000. In addition, for the needs of the forestry profession, members of the Department participated in the implementation of several hundreds of projects.

Faculty deans of the Department

The deans of the Faculty of Forestry, who were members of this Department are:

- 1920–23 Dr. Petar Đorđević
- 1923–26 Dr. Ivan Đaja
- 1932–33 Dr. Đorđe Jovanović
- 1934–35 Dr. Josip Balen
- 1942–44 Dr. Mihailo Gradojević
- 1944–46 and 1948–49 Dr. Mladen Josifović
- 1951–52 Dr. Svetislav Živojinović, academician
- 1953–55 Dr. Žarko Miletić, academician
- 1955–56. Dr. Danilo Todorović
- 1957–58. Dr. Dušan Simeunović
- 1958–59 Dr. Dragoljub Mirković
- 1959–60 Dr. Toma Bunuševac
- 1960–61 Dr. Siniša Stanković
- 1961–62 Dr. Vladislav Popović
- 1962–63 Dr. Branislav Jovanović
- 1963–66 Dr. Dragomir Milojković
- 1967–69. Dr. Đorđe Karapandžić
- 1969–73. Dr. Ljubomir Petrović
- 1973–75. Dr. Pribislav Marinković
- 1981–83 Dr. Nikola Jović
- 1989–2000 Dr. Dušan Jović
- 2003–04 Dr. Ljubodrag Mihajlović
- 2010–15 Dr. Milan Medarević





CHAIR OF SEED SCIENCE, NURSERY PRODUCTION AND AFFORESTATION

Text drawn up by:
Dr. Dragica Vilotić, Full Professor

Brief history

The Chair of Seed Science, Nursery Production and Afforestation has a tradition which is as old as the Faculty of Forestry of the University of Belgrade itself.

It is one of the seven organisational units of the Department of Forestry at the University of Belgrade - Faculty of Forestry. The Chair currently has: two full professors, one associate professor, one research fellow, three assistant professors and three associates in higher education. The Chair also has a Laboratory for seed and seedling testing, Laboratory for Tree Anatomy, Laboratory for Biotechnology, a Centre for the Monitoring and Conservation of Forest Genetic Resources and a Centre for Afforestation and Artificial Forest Regeneration.

The subject of Botany was part of the curriculum of the Forestry Department at the Faculty of Agriculture and Forestry in Belgrade in the academic year 1930/31. In the academic year 1945/46, the courses Genetics and Forest Plantations were introduced to the curriculum of the Silvicultural stream. In the years to come, these courses changed their names, merged and separated, maintaining their basic biological orientation, but moving in the direction of plant production for the needs of forestry, landscape architecture and ecological engineering.

The original name of the Chair comes from the course named Forest Plantations, which changed its name to Forest Crops and Plantations in 1958. Since 1988 until today, this course exists as Seed Science, Nursery Production and Afforestation, after which the entire Chair is named. In addition to this subject, the backbone of the Chair are the subjects of Botany and Genetics, as the theoretical basis of other subjects.

The subject of Botany has the longest tradition at the Chair, since it was mentioned as a common subject for both departments of the Faculty of Agriculture and Forestry. Since then, the subject developed and intertwined with other disciplines, such as genetics or tree anatomy, often changing its

CHAIR STAFF:

Teaching staff

Dr. Dragica Vilotić, Full Professor,
Head of Chair

Dr. Mirjana Šijačić – Nikolić,
Full Professor

Dr. Vladan Ivetić,
Associate Professor

Dr. Dragica Stanković,
Research Fellow

Dr. Marina Nonić,
Assistant Professor

Dr. Dušan Jokanović,
Assistant Professor

Dr. Jovana Devetaković,
Assistant Professor

Professional-technical associates

M.Sc. Radmila Knežević,
Associate in Higher Education

Mirjana Perović,
Master Forest Engineer,
Associate in Higher Education

Vaso Ivetić,
Graduate Forest Engineer,
Associate in Higher Education

name to: Botany with Genetics, Botany with Tree Anatomy, until the present day's Forest Botany and Tree Anatomy.

The first professor of Botany at the Faculty of Forestry was Ružica Glavinjić. In 1951, the first junior trainee forest engineer elected for the subject was Milovan Gajić. In 1953, he was elected to the title teaching assistant in the subject Botany with Genetics. In 1959, he was elected assistant professor in 1965



1 Chair staff
from left to right:
Dušan Jokanović,
Jovana Devetaković,
Dragica Stanković,
Dragica Vilotić,
Mirjana Šijačić-Nikolić,
Marina Nonić,
Vladan Ivetić

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to the title of associate professor and in 1971 to the title of full professor, as the first full professor of the post-war generations. In his many years of work he gave a great contribution to finding and systematising the flora and vegetation of FR Serbia, as well as publication of the *Flora of FR Serbia* published by SANU, where his engagement was great both as a writer and illustrator of plants.

Mladen Korać was elected assistant trainee in the subject Botany with anatomy in 1954. In 1958 he was elected teaching assistant, in 1981 he was elected assistant professor, and in 1986 to the title of associate professor, which he kept until retirement.

In 1983, Dragica Obratov was elected to the title of assistant trainee in the subject of Forest Botany with tree anatomy. In 1993, she was elected assistant professor, and in the later period she joined the Department of Landscape Architecture and Horticulture, where she still teaches today as a Full Professor.

In 1987, Dragica Vilotić was elected teaching assistant in the subject Forest Botany with tree anatomy. She was elected assistant professor in 1993, and in 1997 she earned the title of associate professor. In 2003, she was elected to the title of full professor. Today, she teaches at all three study levels, in the group of subjects related to botany, tree anatomy and medicinal herbs.

In 2003, M.Sc. Gordana Radošević was elected teaching assistant in the subject Forest Botany with Wood Anatomy, and she remained in that position until 2010.

The fifth generation of teachers in the subjects of Forestry Botany and Tree Anatomy and Systematics of Medicinal Plants is represented by Dušan Jokanović, who was elected to the title of teaching assistant, and after that to the title of assistant professor in 2016.

Genetics was introduced as an independent subject to the curriculum of the Faculty of Forestry in 1945, with

the establishment of the independent Faculty of Forestry. Since then, the subject has evolved, following the latest advances in genetics. Since 1961, the subject of Genetics has been expanded with plant breeding, as a practical discipline, and as such it has been present for more than fifty years. In more recent accreditations of the curriculum and teaching plan, the course is in the form of two separate courses: Forest Genetics and Plant Breeding at the Department of Forestry, and Breeding of Ornamental Plants at the Department of Landscape Architecture.

In 1962, Aleksandar Tucović was elected the first lecturer in the subject of Genetics with Plant Breeding. In 1965, he was elected assistant professor. He became an associate professor in 1970, and in 1975 a full professor. He retired in 1994, as Head of the Chair of Seed Science, Nursery Production and Afforestation.

In 1975, Vasilije Isajev was elected assistant trainee in Genetics with Plant breeding. In 1979, he was elected teaching assistant, to the title of assistant professor in 1989, to the title of associate professor in 1994 and in 1999, to the title of full professor. He retired in 2012.

In 1992, Mirjana Šijačić-Nikolić, became an assistant trainee for the same subject. She was elected teaching assistant in 1995, to the title of assistant professor in 2001, to the title of associate professor in 2007 and to the title of full professor in 2011.

The fourth generation of teachers in the subjects of Forest Genetics, Plant Breeding and Breeding of Ornamental Plants is represented by Marina Nonić, who was elected teaching assistant in 2013, and to the title of assistant professor in 2016.

Plant Physiology at the Department of Seed Science, Nursery Production and Afforestation was taught by prof. Dr. Alexander Tucović until his retirement in 1994. Matilda Đukić was elected teaching assistant in 1984, assistant professor



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2 Members of the Commission at the defense of Dušan Jokanović's doctoral dissertation in 2016 (from left to right: Vladan Ivetić, Mirjana Šijačić-Nikolić, Dragica Vilotić, Milan Knežević and Branislava Lakušić – Faculty of Pharmacy)

in 1993, and to the title associate professor in 1998, after which she joined the Department of Landscape Architecture and Horticulture.

Modern tendencies in forestry have led to the establishment of the subject Conservation and Sustainable Use of Forest Genetic Resources, which was the basis for accreditation of a new module in the study programme Forestry called Plant Production and Conservation of Forest Genetic Resources in 2014. The same 2014 accreditation introduced the following new subjects to the curriculum: Quantitative Genetics in Master's degree studies, Breeding of Selected Properties and Molecular Forest Tree Genetics in doctoral studies, and Mirjana Šijačić-Nikolić is in charge of them.

Since the founding of the independent Faculty of Forestry there has been a subject Forest Crops, which developed over time and changed its name. Today the basic subject is called Seed Science, Nursery Production and Afforestation, and it serves as a basis for deriving a large number of Master's degree and doctoral courses.

Radovan Ivkov was the first to be elected lecturer in the subject of Forest crops in 1949. In 1954, he was elected assistant professor, associate professor in 1959 and to the title of full professor in 1965. He retired in 1977.

In 1955, Slobodan Stilinović was elected teaching assistant for the course Forest crops and Plantations, later named Seed Science, Nursery Production and Afforestation. He was elected assistant professor in 1966, and he became associate professor in 1970. In 1975, he was elected full professor.

In 1964, Kosta Markoski was elected assistant trainee as a part-time employee for the subject of Forest crops and Plantations. In 1965, he was elected teaching assistant in the same subject, and in 1983, he was appointed associate for tasks and jobs in the subject of Forest Crops and Plantations. In the same year, Aleksandar Vlajnić became an assistant trainee in the

subject of Seed Science, Nursery Production and Afforestation, and he was elected to the title of teaching assistant in 1989. In 1993, after earning his doctoral degree, he left the Faculty of Forestry and emigrated.

In 1994, Vasilije Isajev was elected to the title of full professor in the subject of Seed Science, Nursery Production and Afforestation, and he was the teacher of this course until his retirement in 2012.

In 1999, Milan Mataruga was elected assistant trainee in this course, but in 1999, he left the Faculty of Forestry in Belgrade and joined the Faculty of Forestry in Banja Luka. In 2002, Vladan Ivetić was elected to the same title. He was elected teaching assistant in 2004, assistant professor in 2010, and to the title of associate professor in 2015. Since 2012, Vladan Ivetić has been in charge of a group of courses in the field of seed science, nursery production and afforestation in undergraduate, master's degree and doctoral studies.

Jovana Devetaković, who was elected teaching assistant in 2016, is a representative of the fifth generation of teachers in the subject of seed science, nursery production and afforestation, and in 2018 she was elected to the title of assistant professor.

In 2013, Dr. Dragica Stanković joined the Chair as a senior research associate, and in 2017 she was elected research fellow, while she also participates in doctoral studies.

The following staff used to work at the Chair: Graduate Forest Engineer Dobrivoje Đorđević, Professional Advisor; Graduate Art Historian Amalija Olić, Laboratory Technician; Graduate Forest Engineer Branislav Matijević, Laboratory Technician and Graduate Engineer Mirjana Aleksić, Laboratory Technician.

Throughout its long history, to this day, professors of the Chair of of Seed Science, Nursery Production and Afforestation have occupied important positions at the the Faculty of Forestry,



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such as: the dean (Prof. Dr. Slobodan Stilinović), vice-deans (Prof. Dr. Aleksandar Tucović, Prof. Dr. Vasilije Isajev and prof. Dr. Mirjana Šijačić-Nikolić), Heads of the Department (Prof. Dr. Slobodan Stilinović and Prof. Dr. Dragica Vilotić) or Deputy Head of the Department (Prof. Dr. Mirjana Šijačić-Nikolić), President and Deputy of the Faculty Council (Prof. Dr. Dragica Vilotić), members of the Council of Biotechnical Sciences (Prof. Dr. Vasilije Isajev, Prof. Dr. Dragica Vilotić and Prof. Dr. Mirjana Šijačić-Nikolić), President of the Genetic Society of Serbia and President of the Section for Organisms Breeding of the Genetic Society of Serbia (Prof. Dr. Vasilije Isajev), member of the Scientific Board for Biotechnology and Agriculture (Prof. Dr. Dragica Vilotić) and full member of the Academy of Engineering Sciences of Serbia (Prof. Dr. Mirjana Šijačić-Nikolić).

Since its establishment until today, a total of 198 graduation papers, 50 Master of Science theses, 21 master's theses and 34 doctoral dissertations were defended at the Chair of Seed Science, Nursery Production and Afforestation. A large number of scientific papers have been published at the Chair, of which 78 in SCI list journals (Chair member as the first author). Chair members have good cooperation with other forestry faculties and institutions from abroad (Banja Luka, Sarajevo, Krakow, Voronezh, Skopje, Ljubljana and Zagreb).

3 Chair staff after the defense of Mirjana Sijačić-Nikolić's doctoral dissertation in 2001. Left-to-right: Radmila Knežević, Gordana Radošević, Mirjana Ocokoljić, Vasilije Isajev, Dragica Vilotić, Aleksandar Tucović, Mirjana Sijačić-Nikolić, Ivana Ivetić and Milan Mataruga)



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4 Promotion into Doctors of Science at the Rectorate of the University of Belgrade (from left to right: Dušan Jokanović, Dragica Vilotić, Mirjana Sijačić-Nikolić, Zoran Maksimović and Marina Nonić)

5 Chair Members at a Congress in Palermo, Sicily in 2017 (from left to right: Marina Nonić, Jovana Devetaković, Mirjana Šijačić-Nikolić, Vladan Ivetić and Dušan Jokanović)

Scientific research and professional activity

In addition to being involved in teaching, the Chair of Seed Science, Nursery Production and Afforestation, is also engaged in scientific research and professional activities in various fields. As part of them, it also provides services to third parties, in terms of project development and implementation, consulting, analysis and issuing expert opinions in the following areas: seed science, nursery production, afforestation, plant breeding, biotechnology, conservation of forest genetic resources, botany, tree anatomy, medicinal herbs and environmental protection. In addition, the Chair is an authorised body for professional nursery control.

Scientific research and professional activity of the Chair are implemented through three laboratories, two centres, a nursery at the Faculty of Forestry, as well as within numerous regeneration tests, pilot forests, provenance tests and sample plots established by the members of the Chair all over Serbia.

The Laboratory for Tree Anatomy was founded in 1993. It is intended for macroscopic, microscopic and submicroscopic research of the structure of herbaceous and woody species. Temporary and permanent microscopic slides are prepared in the Laboratory on the basis of which species and age of specimens are determined and anatomical structure is analysed. It is intended for students of the Faculty of Forestry, as well as for all forestry professionals, botanists and paleontologists, to be as objective as possible, and on the basis of macroscopic and microscopic material, determine the botanical, dendrological, taxonomic affiliation, as well as the basic technological characteristics of a tree and its value in use. The laboratory has its own collection of macroscopic samples and microscopic slides, which is increasing day by day. Head of the laboratory is Prof. Dr. Dragica Vilotić.

The Laboratory for Seed and Seedling Testing was established in 2005. In addition to scientific research, exercises in the subject Seed Science, Nursery Production and Afforestation

are also performed in the Laboratory in the Department of Forestry and the Department of Ecological Engineering for Soil and Water Resources Protection. The laboratory is also available to students during the preparation of their graduation papers, master's degree theses and doctoral dissertations. The laboratory is authorised for testing the quality of seedlings and issuing seed quality declarations. Services are also provided in the field of analysis and issuance of expert opinions on the reasons for seedling drying. Head of the laboratory is Dr. Jovana Devetaković, Assistant Professor.

The Laboratory for Biotechnology was established in 2016 for the needs of scientific research in the fields of genetics, plant breeding and conservation of forest genetic resources. It is available to master and doctoral students, as well as researchers from other fields. It deals with the characterisation of woody plants by applying different molecular markers. The appointed laboratory manager is Prof. Dr. Mirjana Šijačić-Nikolić.

The Centre for Forest Genetic Resources Monitoring and Conservation was established in 2007. The goal of the Centre is promoting an entirely new multidisciplinary access to the forest as a common asset, which should essentially be preserved and left to future generations. Today, this kind of concept is widely accepted in many countries of the world. The Centre deals with the improvement of conservation methods and sustainable use of the forest gene pool of forest tree species through in situ and ex situ conservation and improvement of the production of quality forest seeds and planting material of controlled origin. It also actively participates in the European Forest Genetic Diversity Protection Programme (EUFORGEN). Head of the Centre is Prof. Dr. Mirjana Sijačić-Nikolić.

The Centre for Afforestation and Artificial Forest Regeneration was founded in 2018. The activities of the Centre relate to the entire cycle of afforestation and artificial reforestation,



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which includes: 1) setting goals for artificial forest regeneration and afforestation, 2) making decisions about the need and ways of artificial forest regeneration and afforestation, 3) selection, 4) production and quality control of forest reproductive materials, 5) selection of techniques and preparation of the site and planting and 6) protection and tending in the first years after planting. Head of the Centre is Dr. Vladan Ivetić, Associate Professor.

Scientific research and professional activities of the Chair members are valorised through a large number of domestic and international projects funded by the Ministry of Education, Science and Technological Development, the Ministry of Agriculture, Forestry and Water Management Forest Directorate, the Ministry of Environmental Protection, the Provincial Secretariat for Agriculture, Water Management and Forestry, the Secretariat for Environmental Protection of the City of Belgrade, PE Srbijašume, PUC Zelenilo-Beograd, national parks, municipalities, international organisations, and other sources. Within the framework of the European Cooperation in Science and Technology (COST), members of the Chair have participated or are participating in the implementation of six actions as representatives of Serbia in the management body or as members of working groups. At the proposal of Dr. Vladan Ivetić, with the support of the research team from the Chair and 25 countries, COST has approved a new action: Pan-European Network for Climate Adaptive Forest Restoration and Reforestation (PEN-CAFoRR) for the period 2020-2024, whose holder will be the Faculty of Forestry.

6 A group photo:
Establishment of a beech
provenance test within the
European Network in Debeli
Lug (March, 2007)

Cooperation with other institutions

Since its establishment the Chair has always fostered good cooperation with scientific institutions in the country and abroad. The Chair members maintain good cooperation with the following scientific institutes from Serbia: the Institute of Forestry, the Institute for Lowland Forestry and Environmental Protection, the Zemun Polje Institute for Corn, the Siniša Stanković Institute for Biological Research the Dr. Josif Pančić Institute for the Study of Medicinal Plants in Belgrade, the Institute for Multidisciplinary Research in Belgrade, the Institute for Molecular Genetics and Genetic Engineering. When faculties are concerned, members of the Chair have good cooperation with the Faculties of Agriculture, Biology and Pharmacy in Belgrade and the Faculty of Sciences in Novi Sad. Due to the realisation of projects, scientific research related to doctoral students, as well as student internships, good cooperation was achieved between the Chair members and the following public companies: Srbijašume, Vojvodinašume, Zelenilo Beograd, the Fruška gora, Đerdap, Tara and Kopaonik national parks, etc.

The cooperation of Chair members (as visiting professors, invited lecturers, teacher exchanges, participation in commissions for the defense of doctoral dissertations and master's theses, elections to scientific titles, writing joint papers, etc.) has been achieved with the following institutions from abroad: the University of Banja Luka - Faculty of Forestry, Biotechnical Faculty of the University of Ljubljana, University of Zagreb - Faculty of Forestry, University of St. Cyril and Methodius - Faculty of Forestry in Skopje, Faculty of Forestry and Wood Technology at Mendel University in Brno, and Voronezh State University of Forestry and Technology (Russian Federation).

The Chair members participate in editorial boards and are reviewers of a number of journals, both in the country and abroad, including: Reforesta, Acta herbologica, Genetics, Biologica Nyssana, Bulletin of the University of Belgrade Faculty of Forestry, Šumarstvo, Topola, etc.



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7 Dr. Vladan Ivetić, Associate Professor, first on the right, as a visiting professor at the University of Krakow with the first generation of international master's degree students.

Selected projects

National projects and studies

- “Forest Plantations to Increase the Afforestation of Serbia”, Ministry of Education, Science and Technological Development of the Republic of Serbia (2011–2019)
- “Report on the state of forest genetic resources for the preparation of the Second Report on the State of Forest Genetic resources of the UN Food and Agriculture Organisation (FAO)”, Ministry of Agriculture, Forestry and Water Management - Forest Directorate (2019–2020)
- “Defining of the taxonomic status of beech in Serbia – Phases I and II”, Ministry of Agriculture and Environmental Protection - Forest Directorate (2016–2017)
- “National programme of conservation and sustainable use of forest genetic resources of the Republic of Serbia”, Ministry of Agriculture and Environmental Protection - Forest Directorate (2015–2016)
- “Protection and sustainable use of the gene pool of rare and endangered species of the Great War Island”, Secretariat for Environmental Protection of the City of Belgrade (2014–2016)
- “Establishment of experimental Paulownia spp. plantations in different sites”, Ministry of Agriculture, Water Management and Forestry – Forest Directorate (2010–2012)

International projects

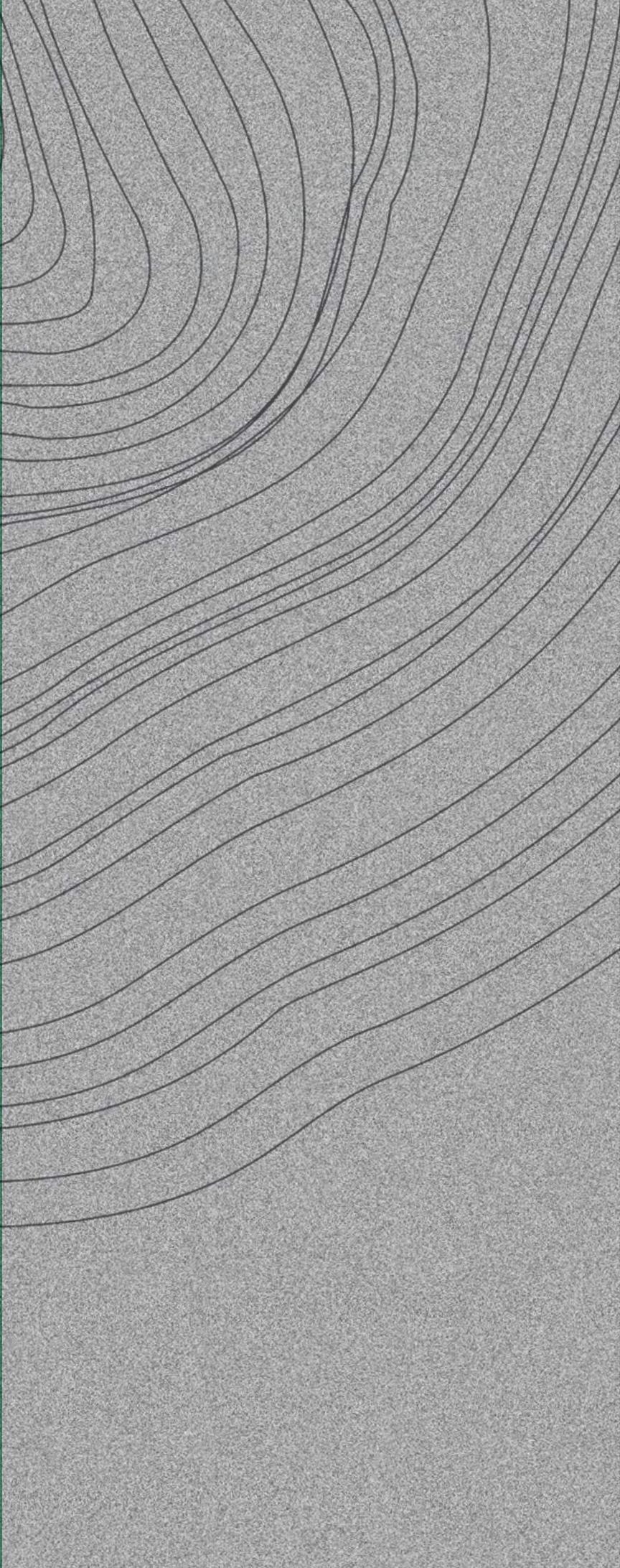
- COST Action: *Pan-European network for climate adaptive forest restoration and reforestation* (PEN-CAFoRR) (2020–2024)
- COST Action CA18134: *Genomic biodiversity knowledge for resilient ecosystems* (G-BIKE) (2019–2023)
- COST Action CA16208: *Knowledge conversion for enhancing management of European riparian ecosystems and services* (CONVERGES) (2017–2021)
- COST Action CA18207: *Biodiversity of temperate forest taxa orienting management sustainability by unifying perspectives* (BOTTOMS-UP) (2019–2023)
- COST Action FP1305: *Linking belowground biodiversity and ecosystem function in European forests* (BioLink) (2014–2018)
- COST Action ES1101: *Harmonizing global biodiversity modeling* (HarmBio) (2012–2016)
- COST Action FP0905: *Biosafety of forest transgenic trees: improving the scientific basis for safe tree development and implementation of EU policy directives* (2010–2014)

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CHAIR OF FOREST ECOLOGY

Text drawn up by:
Dr. Olivera Košanin, Associate Professor

Brief history

The Chair of Forest Ecology organisationally belongs to the Department of Forestry. According to the Statute of the University of Belgrade - Faculty of Forestry, which entered into force on September 25, 1998, the Chair of Forest Ecology was established with the following teaching staff and disciplines: Dr. Zagorka Tomić (Forest Phytocoenology and Dendrology), Dr. Nikola Jović (Forest Typology), Dr. Vesna Joksimović (Petrography with Weathering Crust Geology), Dr. Milan Knežević (Pedology), Dr. Milan Medarević (Forest Typology), Dr. Slobodan Vučićević (Forest and the Environment), Dr. Nevena Petrović (Forest Ecoclimatology), Master of Science Rade Cvjetičanin (Dendrology and Forest Phytocoenology), Master of Science Rajko Milošević (Forest Typology), Grad. Forest Engineer Olivera Košanin (Pedology) and Grad. Meteorologist Nemanja Krpić (Forest Ecoclimatology). The following laboratory technicians worked in this period: Grad Agricultural Eng. Vladan Lukić (Dendrology and Forest Phytocoenology), Radojka Radin and Milena Žarković (Pedology) and Marina Đorđević (Petrography with Weathering Crust Geology).

Most of the disciplines of the Chair of Forest Ecology exist since the establishment of the Faculty of Forestry, the largest part of its existence being related to the Department of Silviculture. Pursuant to the 1930 Law on Universities, the Institute for the Establishment, Silviculture and Protection of Forests with Hunting of the Faculty of Agriculture and Forestry lists the following professional subjects: Geology with Mineralogy and Petrography and Dendrology with Tree Anatomy and Pedology. Since the academic year 1945/46, the following subjects of today's Chair were taught within the Chair of Forest Establishment and Silviculture of the Forest-Silvicultural Department: Petrography with Geology, Dendrology, Pedology and Plant Nutrition.

CHAIR STAFF:

Teaching staff

Dr. Milan Knežević,
Full Professor

Dr. Rade Cvjetičanin,
Full Professor

Dr. Rajko Milošević,
Associate Professor

Dr. Olivera Košanin,
Associate Professor, Head of Chair

Dr. Marko Perović,
Associate Professor

Dr. Marijana Novaković-Vuković,
Assistant Professor

Master Forest Engineer, Janko Ljubičić,
Teaching Assistant

Associates in higher education

Milena Žarković, Graduate Forest Engineer

Vladan Lukić, Master Engineer

Gordana Petković, Master Engineer

Profesional - technical associates

Anđelka Simić

According to the 1960 Statute, the following subjects in disciplines of the Chair of Forest Ecology were taught at the Chair of Silviculture of the Forestry Department: Petrography with Geology, Forest Pedology, Plant Nutrition with Microbiology and Dendrology with Phytocoenology. Provisions of the 1983 Statute introduce Forest Typology to the disciplines of the Chair. At the time of its establishment (in 1998), the following subjects were taught at the Chair of Forest Ecology: Petrography with Weathering Crust Geology, Dendrology, Pedology for Foresters, Forest Phytocoenology, Forest and the Environment,



1 Field classes of Forest and the Environment, Pedology and Forest Phytocoenology in the academic year 2019/20 – Obedska Pond

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Forest Typology and Forest Ecoclimatology. Since 2002, Forest Ecoclimatology is again studied at the Chair of Silviculture.

Before 1998, a number of prominent teachers, teaching assistants, teaching associates and laboratory technicians worked on the subjects of the Chair. A large number of teachers used to teach the disciplines of the Chair, including: Dr. Aleksandar Stebut, Dr. Pavle Černjavski, Dr. Mihilo Antić, Dr. Branislav Jovanović, Dr. Velibor Aleksić, Dr. Vera Knežević Đorđević and others. According to data from June 1990, the following teachers taught the subjects of the Chair: Dr. Nikola Jović, Dr. Zagorka Tomić, Dr. Vesna Joksimović, M.Sc. Milan Knežević, M.Sc. Rade Cvjetičanin, Graduate Geology Engineer Saša Ričkovski, and laboratory technicians: Milen Stevanović, Miladinka Lukić, Ljiljana Borisavljević and Radojka Radin.

Since its establishment on September 25, 1998, more than 600 students graduated from the Chair of Forest Ecology and more than 30 master's theses were defended. A total of 14 doctoral dissertations were defended. A total of 8 (eight) dissertations were defended in the field of soil science, 2 (two) in dendrology, 2 (two) in phytocoenology and 2 (two) in forest typology. Members of the Chair participated in the work of more than 50 commissions for the defense of doctoral dissertations both at the Faculty where they work and in other higher education institutions in the country and region: the University of Belgrade - Faculty of Biology, Faculty of Agriculture, University of Belgrade, University of Banja Luka, St. Cyril and Methodius University in Skopje, etc.

In addition to undergraduate studies, the Department of Forest Ecology conducts classes in Master's degree and doctoral studies. The study programme of undergraduate studies includes the following subjects that have the status of compulsory

courses: Petrography with Geology, Dendrology, Pedology, Forest Phytocoenology, Forest and the Environment and Forest Typology. In addition to the compulsory ones, classes of the following elective courses are also taught: Plant Nutrition, Endemic and Endangered Woody Species in Serbia, Ecological Classification of Deforested and Degraded Habitats and Ecological-Typological Bases in Nature Protection. Teachers from the Chair of Forest Ecology also teach in the Department of Ecological Engineering for Soil and Water Resources Protection, where the following courses are compulsory: Petrography with Geology, Dendrology, Pedology and Forest Phytocoenology, and electives: Plant Nutrition and Ecological Classification of Degraded Habitats.

All master's degree courses in the study programme Forestry - Module Forest Ecology, Protection and Improvement of the Environment belong to the Chair of Forest Ecology. The compulsory courses are: Research Methods and Techniques in Ecology, Protection and Improvement of the Environment, Dendrology and Pedology. The elective courses are Anthropogenic and Technogenic Soils, Forest Vegetation of Serbia, Ecological Classification of Forests and Forest Habitats, Typological Mapping and Forest Types in Serbia, Typological Defining of Stands of Different Origins and Structure, Nature Protection and Protected Natural Areas.

The compulsory courses in doctoral studies of the module Forestry and submodule Forest Ecology, Protection and Improvement of the Environment, which belong to the Chair are: Dendrology and Pedology. The elective courses are: Degradation, Protection, Use and Land Reclamation, Soil Capability Evaluation and Mapping, Hazardous and Noxious Substances in the Environment, Phytocoenology, Floristic Diversity of Serbia and Typological Bases in Forest Purpose Defining.



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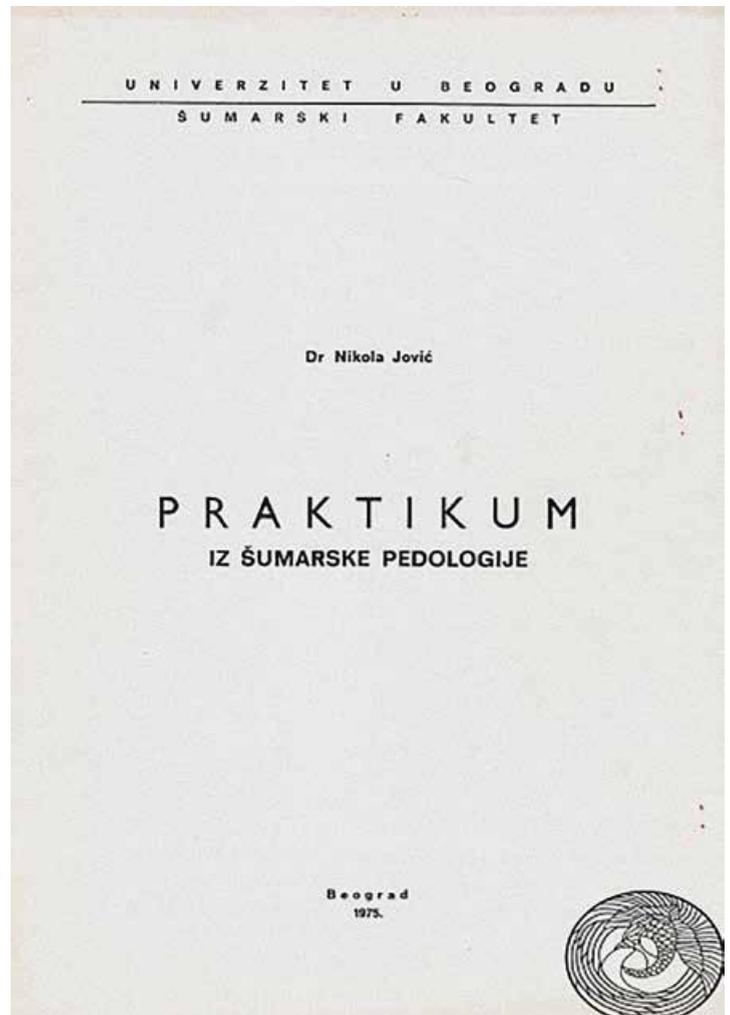
Classes in the courses of the Department of Forest Ecology are currently taught by six teachers and one teaching assistant. The course of Petrography with Geology is currently taught by Dr. Zoran Nikić and Dr. Nenad Marić, teachers of the Department of Ecological Engineering for Soil and Water Resources Protection. There are several laboratories at the Chair and one Centre: The Laboratory for Dendrology and Phytocoenology, Pedological Laboratory for Soil Physics, Pedological Laboratory for Soil Chemistry, Centre for Monitoring Forest Sites and Forest Ecosystems Floristic Diversity and a Collection Minerals and Rocks.

2 Pedological field research
- Dr. Milan Knežević
with students

3 Mast. Eng. Vladan Lukić,
Grad. Forest eng. Milena Žarković,
Dr. Rade Cvjetičanin,
Dr. Olivera Košanin
and Dr. Marko Perović



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4 Practice book in
Forest pedology – Cover

Scientific research and professional activity

The scientific research of teachers and associates of the Chair of Forest Ecology is realised through basic, applied and developmental research in the fields of forest ecology, soil science and environmental protection. The scientific work of the Chair members is implemented through the study of: variability and taxonomy of woody species and populations on the basis of morphological markers, the genetic variability of specimens and populations of woody species, the identification and determination of woody species, synecological and idiecological characteristics of forest plant communities and forest tree populations. In addition, Studies at the Chair are focused on: the features, genesis and classification of forest soils, study of the impact of environmental conditions on the evolution and properties of soil, ecological-vegetation classification of forests in Serbia, the study of soil degradation processes (due to erosion processes, pollutant/heavy metal content, the acidification process), the study of soil productivity potential and links with forest stand productivity indicators, the delineation of ecological forest units, etc.

In the past 20 years, the Chair has achieved intensive cooperation with the economy through the work of teachers and associates in the implementation of a number of projects. The Chair members individually participated in the implementation of more than 75 different projects of the Forest Directorate of the Ministry of Agriculture and Environmental Protection of the Republic of Serbia, the Ministry of Education, Science and Technological Development of the Republic of Serbia and other institutions. The Chair has a continuous cooperation with PUC Gradsko zelenilo in providing scientific and professional advice. In addition, there is a very intense and constant cooperation with PE Srbijašume and PE Vojvodinašume, since every year field classes for students and field scientific research take place on areas managed by these public companies, for the

purpose of preparing graduation and master's degree theses, as well as doctoral dissertations.

Ample experience of teachers and associates from the Chair has resulted in a large number of scientific and professional articles and chapters in monographs. Since its establishment in 1998 to this day, teachers and associates of the Chair have published more than 600 scientific and professional articles in domestic and foreign journals, as well as in conference proceedings from domestic and international conferences. More than 45 of those articles were published in journals from the SCI list. More than 25 contributions in the form of monographs chapters in monographs and thematic proceedings should be added to this list.

In addition, members of the Chair have to date published the following: textbooks "Dendrology", "Forest and the Environment", "Petrography with Weathering Crust Geology", a CD edition of the textbook "Plant Nutrition", three different editions of the practice book called "A Practice Book in Dendrology", also several reprints of the publication "A Practice Book in Pedology", "A Practice Book in Typology"; and "Petrography with Geology in Forestry" as well as a manual entitled "Manual for Determining the Most Important Indigenous Oak (*quercus l.*) Species".

Before the founding of the Chair, within the disciplines that have been taught since the founding of the Faculty of Forestry, teachers and associates have published more than 500 scientific articles and a dozen textbooks. Dr. Branislav Jovanović was the author of six editions of the textbook "Dendrology" and an associate of the Institute of ecology and biogeography and the Committee on Flora and Vegetation of SANU. He is also the winner of a large number of awards, charters, certificates of acknowledgement, etc. He is the winner of: the award of the Government of the People's Republic of Serbia (1948),



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the October Award of Belgrade (1970), the 7th July award of the Presidency of FR Serbia (1988). He also received a Medal of Labour with a Red Star (1970).

Dr. Mihajlo Antić participated in the writing of the textbook "Pedology", which is still used today. He was head of the Section for Soil Genesis and Classification, Associate of the Institute of Soil Studies, and from 1963 also an external associate of the Institute of Forestry and Wood Industry in Belgrade. In addition, with a group of scientists from the Institute for Biological Research Siniša Stanković he was the winner of the October award in 1979.

Dr. Nikola Jović was a delegate of the Assembly of the Republic Community of Education, a member of the Republic Fund for University Education, chairman of the board of the Fund for the Standard of Students and Pupils in FR Serbia. He received a Medal of Labour of the 3rd order, and for his work in the Yugoslav Society for soil studies and for his scientific and professional achievements in soil science he was awarded a Medal of Merit for the People with a Silver Flag in 1976.



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5 Dr. Rade Cvjetičanin -
Phytocoenological research

6 The collection of rocks
and minerals - Anđelka Simić,
professional-technical associate
(Petrography with Geology)

7 Laboratory for
Soil Chemistry – Master Eng.
Gordana Petković

Cooperation with other institutions

Since the founding of the Chair of Forest Ecology, fruitful cooperation has been established with numerous domestic and international institutions and organisations. Dr. Nikola Jović was a Vice-Rector of the University of Belgrade for two mandates, General Secretary of the Yugoslav Soil Science Society and the Union of Scientific Biological Associations of Yugoslavia. In addition to that, in 1976, he was elected President of Commission V of the Yugoslav Society - Commission for Soil Genesis and Classification.

Dr. Branislav Jovanović was an associate of the Institute for Ecology and Biogeography and the Committee on Flora and Vegetation of SANU. Dr. Milan Knežević was Vice-president of the Commission for the KSH-190 standard for soil quality of the Federal Institute for Standardisation, a member of the working group of the Ministry of Agriculture and Environmental Protection of the Republic of Serbia for drafting the Law on soil as a natural resource, President of the Commission for Forest Soils of the Serbian Soil Science Society.

Dr. Rade Cvjetičanin has been a member of the Committee for Flora and Vegetation of the Serbian Academy of Sciences (since 2007), and a member of the Society for the Protection of Natural Heritage "Arbor Magna" from Banja Luka. He was a member of the editorial board of the journal Bulletin of the University of Banja Luka - Faculty of Forestry in the period from 2010 to 2013.

Domestic institutions and organisations which stand out in terms of cooperation with the Chair include the Ministry of Education, Science and Technological Development. That cooperation is reflected in the participation of members of the Chair in the implementation of several projects. Given the character of the disciplines belonging to the Chair, there was also a need for cooperation with other faculties in the country and abroad, among which stand out: the University of Banja Luka – Faculty



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of Forestry, University of Belgrade - Faculty of Biology, University of Belgrade - Faculty of Agriculture, State University of Novi Pazar, State University St. Cyril and Methodius in Skopje - Faculty of Forestry, and Faculty of Forestry in Sarajevo. Members of the Chair of Forest Ecology have a very good cooperation with the Mendel University from Brno (Czech Republic), where Dr. Olivera Košanin and Dr. Marko Perović gave invited lectures in September 2019.

8 Master Forest Engineer Janko Ljubičić,
Master Engineer Vladan Lukić
- Field classes on Mt. Goč and
Mt. Kopaonik in the academic
year 2019/20.



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9 Dr. Marijana Novaković-Vuković,
Master Engineer Vladan Lukić,
Dr. Olivera Košanin

10 A detail from the dendrological
collection - Master Engineer
Vladan Lukić, Laboratory Technician.

11 Herbarised material

Selected projects

National projects and studies

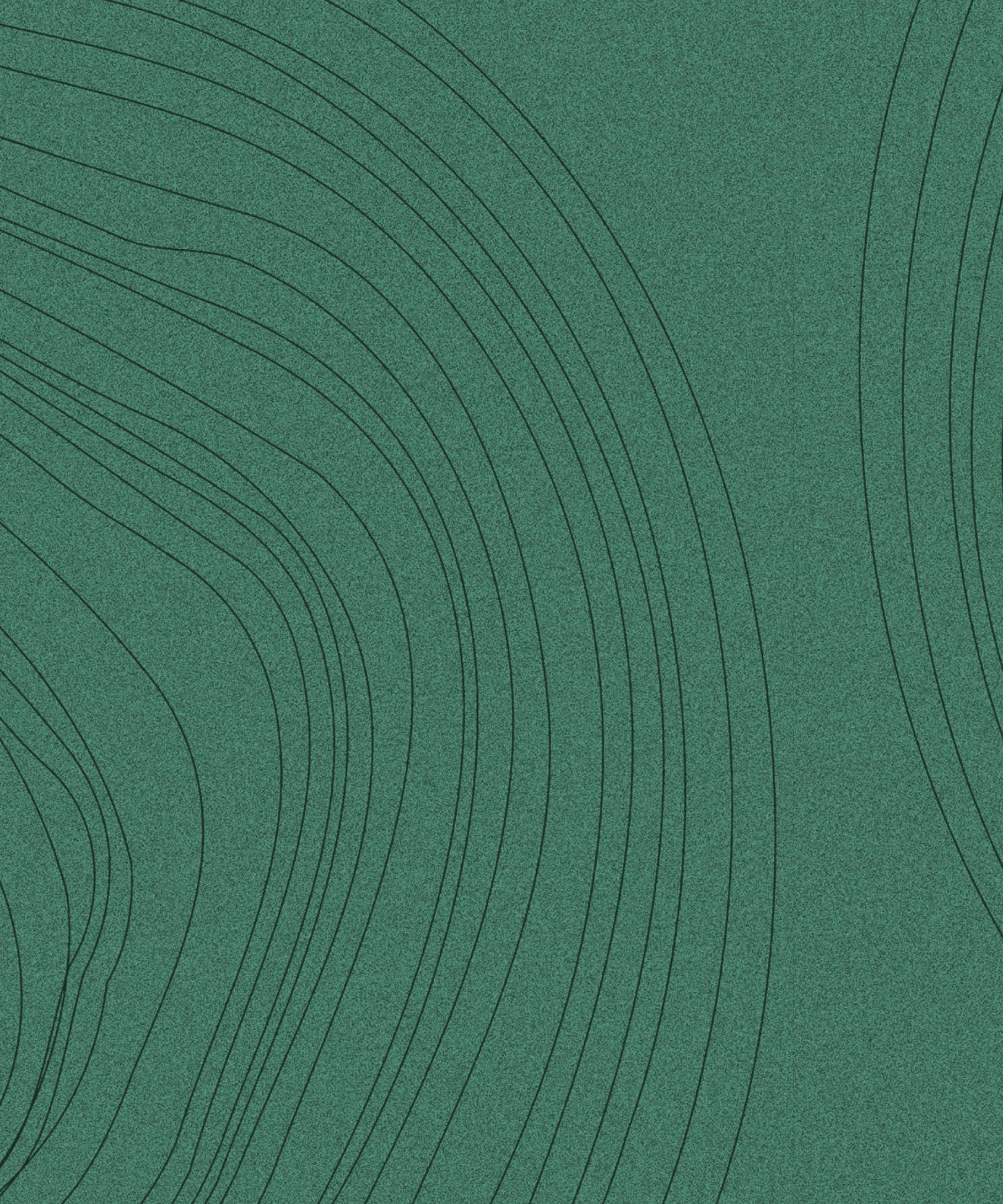
- “Harmonisation of the nomenclature of the Basic Pedological Map of the Republic of Serbia with the WRB classification”, Ministry of environmental protection, mining and spatial planning (2011)
- “Determining the condition, degree of pollution and chemical degradation of soils of the industrial zones of Pančevo and Šabac and Burnt Areas on Mt. Tara”, Ministry of natural resources, mining and spatial planning (2014)
- “Impact of torrential floods on the physical and chemical degradation of soils in Eastern Serbia”, Ministry of Agriculture and Environmental Protection of the Republic of Serbia (2015)
- “Determining the condition and potential of non-overgrown forest soils and abandoned agricultural soils in the mountainous area of Western Serbia”, Ministry of agriculture and environmental protection of the Republic of Serbia (2015)
- “The Service of Determination of Soil Sensitivity to Acidification (Kosjerić, Požega, Užice)”, Ministry of Environmental Protection (2018)
- “Typological defining of the forests of Belgrade - the basic starting point of purpose classification and proposal of measures with the aim of improvement and sustainability of a quality environment among the citizens of Belgrade”, the City of Belgrade (2012)
- “Research of forest ecosystems reaction to climate change in the territory of the city of Belgrade”, the City of Belgrade (2014)

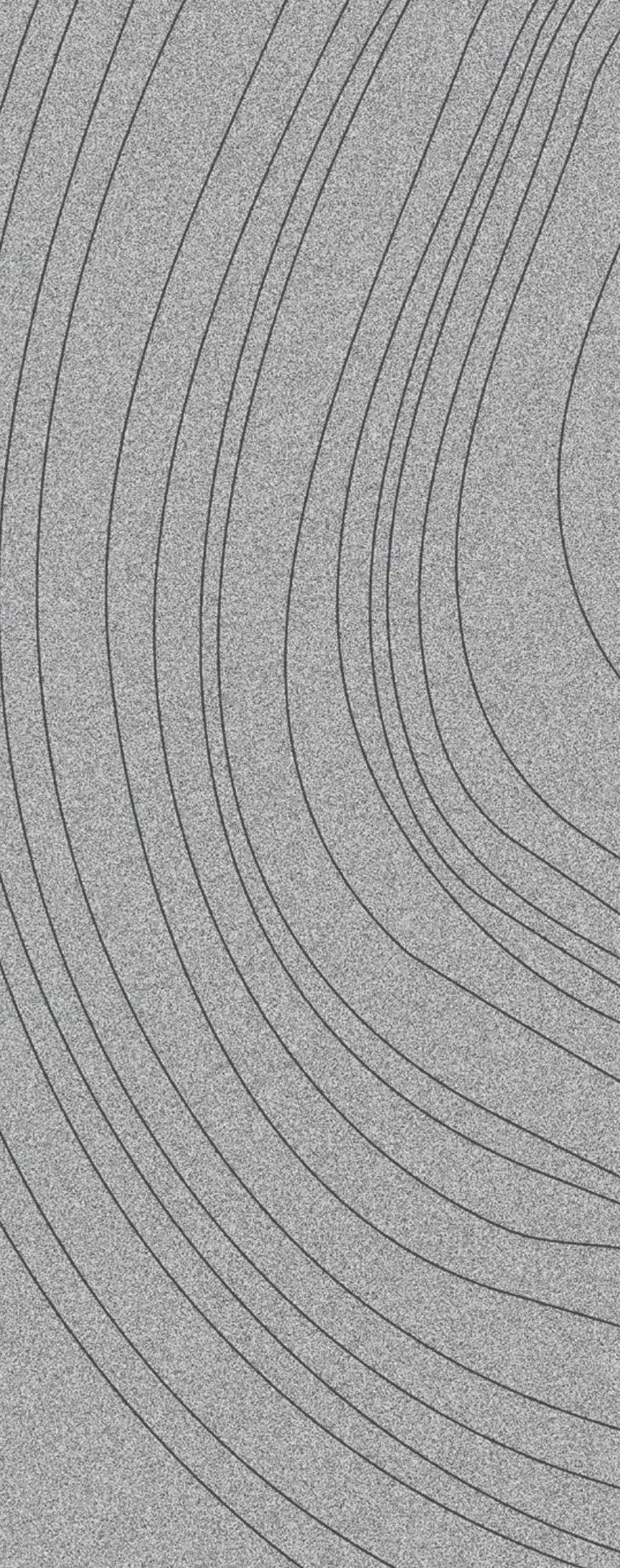
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CHAIR OF SILVICULTURE

Text drawn up by:
Dr. Milun Krstić, Full Professor

Brief history

The Chair of Silviculture, as one of the basic organisational units of the University of Belgrade - Faculty of Forestry, as well as a Chair of basic professional subjects and scientific disciplines of forestry, has a tradition which is as long as the tradition of the University of Belgrade - Faculty of Forestry. The name of the Chair stems from the name of the subject which has been present since the establishment of the Faculty of Agriculture and Forestry. From that period until today the subject has developed and later a number of courses in undergraduate, master and doctoral studies at the Faculty of Forestry stemmed from it, based on new scientific knowledge, modernisation, as well as the needs of forest science and economy. The composition of the Chair of Silviculture has changed dynamically, and it was adapted in accordance with the laws on higher education and the Statute of the Faculty of Forestry and in accordance with the developments in forest science and profession.

Since the establishment of the Forestry Department of the Faculty of Agriculture and Forestry (1920), the teaching content of the field of silviculture has been an integral part of the curriculum for future forest engineers. During later developments, the establishment of an independent Faculty of Forestry in 1949 and its transformation, the number and names of courses of the Chair changed. According to the 1930 University Law, one of the total of 18 institutes of the Faculty of Agriculture and Forestry was the Institute for the Establishment, Silviculture and Protection of forests with hunting, with the following list of professional subjects: Botany - General and Specific; Agrogeology With Mineralogy and Petrography; Forest Establishment and Silviculture; Meteorology with Climatology; Pedology; Dendrology and Tree Anatomy; Forest Protection; Hunting. By a 1939 Decree, Chairs were formed at the Faculty of Agriculture and Forestry, and with the 1942 general Decree on Universities

CHAIR STAFF:

Teaching staff

Dr. Milun Krstić,
Full Professor

Dr. Martin Bobinac,
Full Professor

Dr. Violeta Babić,
Associate Professor, Head of Chair

Dr. Branko Kanjevac,
Teaching Assistant

Professional - technical associates

Uroš Perišić,
Professional-Technical Associate

the chair of Forest Establishment and Silviculture became one of the three Chairs of the Forestry Department. After World War II, starting with the academic year 1945/46, within the Forest-silvicultural stream, the courses taught at the Chair of Forest Establishment and Silviculture were the following: Botany, Petrography with Geology, Silviculture, Meteorology with Climatology, Dendrology, Pedology, Tree Anatomy, Plant Nutrition, Forest Crops, Forest Reclamation and Forest Protection.

Pursuant to the provisions of the first Statute of the Faculty of Forestry from 1956, two Departments were formed: the General Forestry Department and the Wood -industrial Department. According to the 1960 statute of the Faculty, five departments were established at the Faculty of Forestry. Within the Forestry Department the Chair of Silviculture consisted of the following subjects: Forestry, Meteorology with Climatology (Department of Forestry, Department of Residential Greening and Department of Ecological Engineering for Soil and Water Resources Protection), Dendrology with Phytocoenology, Plant Nutrition with Microbiology, Forestry Pedology, Petrography with Geology, Fundamentals of Silviculture and Forest Management (Department of Residential Greening and Department of Erosion and Torrent Control). By changing and



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supplementing the 1961 Statute of the Faculty of Forestry, in order to separate other forest activities in practice from the classical scope of work of forest professionals, the Forestry department was divided into two departments: the Department of Silviculture and the Department of Forest Utilisation.

Pursuant to the 1974 Law on Associated Labor (LAL) and the provisions of the Statute of the Faculty of Forestry self-governing institutes were formed, which became the basic units of organised labour (BUOL) in 1977 and 1978. Since the academic year 1977/78, a new subject was introduced to the Chair of Silviculture within the BUOL Institute of Forestry in addition to the above courses, and that was Study and Improvement of the Environment. The Chair was also involved in postgraduate teaching in Master of Science and Doctoral studies in the field of Silviculture.

Based on the 1983 Statute of the Faculty of Forestry, the Chair of Silviculture consisted of the following subjects: Forestry, Meteorology with Climatology, Petrography with Geology, Pedology, Dendrology with Phytocoenology, Forestry in Landscape Architecture (Institute of Landscape Architecture) and elective subjects: Forest Ameliorations and Forest Typology. Postgraduate teaching was performed in the field of silviculture and doctoral dissertations were defended. According to the 1988 Statute of the Faculty of Forestry, there was a change in the curriculum of the subject Meteorology with Climatology, and in accordance with the needs of forestry students, the name was changed to Forest Ecoclimatology. BUOLs were abolished and the Faculty of Forestry was reorganised as a single educational-scientific institution in the form of a department. This form of organisation has been retained until today, with certain changes of the names of departments, i.e. streams. Within the Department of Forestry, the Chair includes the same subjects, with the subject of Forest Ameliorations as a compulsory subject.



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The subject Dendrology with Phytocoenology is divided into two separate subjects, and the subject Study and Improvement of the Environment is renamed to the subject Forest and the Environment.

Since 1990, with change in the curriculum of the Department of Forestry the subject which was formerly named Forest Ameliorations was renamed to Forestry Ameliorations in line with the needs of forestry profession and forestry students. According to the changes in the 1998 Statute of the Faculty of Forestry, the Chair of Forest Ecology was formed, by taking a large number courses which from the formation of the independent Faculty of Forestry belonged to the Department of Forestry. After that, the Chair of Silviculture consisted of the following subjects: Silviculture and Forestry Ameliorations. The subject Silviculture is also taught at the Department of Erosion Control. In the field of forestry, there are Master of Science studies, specialist studies and doctoral studies in the field of silviculture.

Pursuant to the new University law, and the 2002 Statute of the Faculty of Forestry, the Chair of Silviculture within the Department of Forestry consisted of the following subjects: Forest Ecoclimatology - returned to the Chair of Silviculture (also taught in the Department of Landscape Architecture and Department of Erosion Control); Silviculture 1 (also taught in the Department of Erosion Control); Silviculture 2 (name of the subject Forestry Ameliorations changed in accordance with the needs of forestry students and profession).

1 Field classes of
Silviculture

2 Field classes
of Forest
Ecoclimatology



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Pursuant to the 2006 Statute of the Faculty of Forestry, which is harmonised with the new Law on Higher Education (LHE), the Bologna system of education (Bologna 1) was introduced, and classes were taught in undergraduate (bachelor), master's degree, and doctoral studies. At that time, the Chair of Silviculture covered the following subjects: Forest Ecoclimatology (Department of Ecological Engineering for Soil and Water Resources Protection and the Department of Landscape Architecture), Silvicultural Ecology, Silviculture I, Silvicultural Ecology (Department of Ecological Engineering for Soil and Water Resources Protection), Silviculture II, Silviculture of Special-Purpose Forests (master's degree studies), Modeling and GIS in Silviculture (master studies). There is a special module in master's degree studies named Silviculture, Plant Production, Protection and Ecology. Elective subjects were introduced in the process of accreditation of new study programmes in 2008 (Bologna 2). Silviculture of Special-Purpose Forests was introduced as an elective subject to the Chair of Silviculture. Narrow scientific fields were established and for Silviculture such a field is composed of the above subjects.

With the new 2013 accreditation of study programmes (Bologna 3) the study programme of Forestry was amended, so that the narrow scientific field Silviculture is taught in undergraduate, master's degree and doctoral studies, in a number of teaching disciplines. Undergraduate studies - compulsory courses: Forestry Ecoclimatology in the Department of Forestry and the Department of Ecological Engineering for Soil and Water Resources Protection (elective courses in the Department of Landscape Architecture); Silvicultural Ecology and Silviculture 1; Silviculture 2; Fundamentals of Silviculture (in the study programme Ecological Engineering). Elective courses: Climate of Forest and Urban Areas of Serbia, Silviculture of Special-Purpose Forests, Fundamentals of the Silviculture of



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Lowland Forests. Master's degree studies, module 4 - compulsory courses: Research Methods and Techniques in Silviculture, Silviculture 1, Silviculture 2. Elective courses: Silviculture of Special-Purpose Forests, Silvicultural Analytics, Silviculture of Lowland Forests, Applied Ecoclimatology in Silviculture. Doctoral studies, module 1.7. - Compulsory subjects: Methodology of Scientific Research Work and Techniques of Scientific Research. Elective courses: Silviculture in Hilly and Mountainous Areas, Silviculture of Special-Purpose Forests, Silviculture of Lowland Forests, Applied Ecoclimatology in Silviculture.

Teachers of the Chair of Silviculture participated in teaching the subjects of Silviculture at the Faculties of Forestry in Banja Luka and Vlasenica in undergraduate and master's degree studies and field classes.

An integral part of the Chair are two centres, for scientific and professional activities of Chair members performed during their work on the collection and processing of data from sample plots. Those centres are the Centre for Silvicultural Data Monitoring, Collection and Processing and the Centre for Climate Change Monitoring in Forest Ecosystems.

Over the years, along with the development of the Faculty, the subjects of the Chair of Silviculture were taught by a large number of teachers and associates. Pioneering work in the field of Silviculture belongs to a teacher from the first generation of teachers at the Faculty of Agriculture and Forestry, engineer Milan Mužinić, who was elected part-time professor for the subject Forest Establishment and Silviculture with Forest Ameliorations and Hunting in the period from 1922 to 1927, as well as Dr. Josip Balen, who used to teach from 1927 to 1941. Starting from the academic year 1945/46, the second generation of teachers were: Dr. Toma Bunuševac, who laid down the foundations of studying environmental conditions in forestry, their impact on the forest and the impact of the forest on

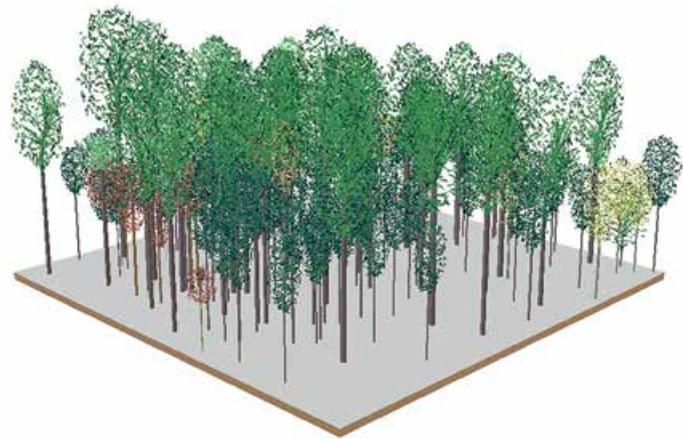
environmental factors, the study of bio-ecological characteristics of forest trees, methods and techniques of silviculture in practice based on numerous principles that are still used today. Dr. Branislav Jovanović was the founder of the courses Dendrology and Morphology Studies, Horology and Ecology of Forest Tree Species and Forest Communities they Build or Appear in. Dr. Marko Milosavljević laid down the foundations and pointed out the importance of meteorology and climatology as significant scientific disciplines for the field of forestry. Dr. Mihailo Antić taught the course Pedology and pointed out its importance in forestry. A significant contribution to the development of forest science and profession, modernisation and innovation of the curriculum was given by professors of the next generation at the Chair. The next generation were: Dr. Stevan Jovanović, Dr. Nikola Jović, Dr. Velibor Aleksić and Dr. Borislav Kolić. The teachers of the later generation were: Dr. Petar Gburčik, Dr. Zagorka Tomić and Dr. Ljubivoje Stojanović. The youngest generation of teachers were Dr. Vesna Joksimović, Dr. Milun Krstić and Dr. Milan Knežević.

After the transition of certain subjects from the Chair of Silviculture to the Chair of Forest Ecology, since 1998, teachers of the Chair of Silviculture have been Dr. Ljubivoje Stojanović, Dr. Milun Krstić, Dr. Martin Bobinac and Dr. Violeta Babić. In teaching classes in the subject of Forestry ecoclimatology the hired part-time teachers were: Dr. Nevena Petrović, in the period from 1998 to 2003 and Dr. Miroslava Unkašević, from 2003 to 2009 and in the academic year 2013/14. In line with the modern trends of development of forest science and profession, these teachers gave a significant contribution by modernising the fundamental disciplines of the Chair, as well as by initiating and introducing new scientific disciplines and conceptualising the teaching content at all levels of study in accordance with the Bologna system of education. They have also made a significant contribution to teaching by introducing and the application of modern computer software. A special contribution of Prof. Dr. Ljubivoje Stojanović and Prof. Dr. Milun Krstić is in the modernising and writing of new textbooks in the field of forestry, in accordance with the modern needs of forest science and profession.

The first teaching assistant in the subject of Forest Establishment and Silviculture was eng. Branislav Jovković, and after World War II, eng. Toma Bunuševac. Later on, the successively elected teaching assistants or teaching associates in the subject of Silviculture were: Stevan Jovanović in 1962, Ljubivoje Stojanović in 1970, Milun Krstić in 1979, Martin Bobinac in 1983 and Ivan Bjelanović in the period from 2007 to 2015. In the current period since 2015, the teaching assistant is Master eng. Branko Kanjevac. Teaching assistants in Forest Ecoclimatology were graduate meteorologists: Ljiljana Džingalašević from 1990 to 1996; Nemanja Krpić from 1998 to 2000; Violeta Babić, M.Sc. of Forestry in the period from 2003 to 2015 until her election to the title of assistant professor.



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3 Students during their practice in Silviculture

5 Forestry students doing their work during practice in Silviculture

4 Students doing tree marking during their practice

6 Visualisation of stands using SVS software

Scientific research and professional activity

Scientific research at the Chair takes place proportionate to the shares of individual disciplines. Given their character, scientific research can roughly be divided into two segments: the research of environmental factors, which includes the research of the significance of environmental factors impact on the forest, impact of the forest on the ecological factors and their significance for the application of silvicultural measures, as well as the study of bioecological characteristics of forest trees and research on the application of silvicultural measures in accordance with the principle of close-to-nature silviculture in the field of natural regeneration and tending of natural forests and artificially established stands, conversion of coppice forests, amelioration of degraded forests, silviculture of special-purpose forests, silvicultural analytics - modelling, and visualisations and simulation of silvicultural works and measures.

Numerous activities and ample experience of teachers and associates have resulted in an exceptional number of scientific and professional articles, monographs, special editions and other scientific publications. Since the founding of the Faculty of Forestry and the Chair of Silviculture to date, teachers and associates of this Chair have published over 2500 scientific and professional articles in domestic and international journals and domestic and international conference proceedings and in special publications. Teachers and associates of the subjects that are part of the Chair of Silviculture today have published about 850 bibliographic items. Out of that, 30 articles are in journals from the SCI list, over 250 papers in scientific journals, about 250 papers at scientific conferences, 25 papers are monographs or chapters in monographs in which teachers of the Chair participated, as well as as a large number of professional papers and contributions.

It is especially important to note that at the initiative of the Chair, i.e. of Prof. Dr. Ljubivoje Stojanović, who was also

the editor-in-chief, two monographs of national importance were published with 30 authors from the Faculty of Forestry from all fields of activity in forestry: "Beech (*Fagus moesiaca*/Domin, Maly/Czeczott.) in Serbia" (2005) and "Sessile Oak in Serbia" (2007). The publishers are the Faculty of Forestry and the Association of Forest Engineers and Technicians of Serbia from Belgrade. Other important monographs are: Bobinac M. (2011): Ecology and Regeneration of Hygrophilous Pedunculate Oak Forests of Ravni Srem (outstanding monograph of national importance), Croatian Forestry Institute and Forestry Institute Belgrade, Zagreb; Krstić, M. (2003): Forests of the Iron Gate Area - Condition and Silvicultural Measures, Akademska misao, Belgrade; Krstić, M. and associates in certain chapters (2005): Coppice Beech Forests in Northeastern Serbia, Faculty of Forestry and Institute of Forestry in Belgrade.

Members of the Chair of Silviculture were editors-in-chief of scientific journals and members of the editorial board of journals at home and abroad. They have been reviewers of teaching literature (textbooks and practice books), monographs, project evaluators, reviewers of papers in scientific journals and at scientific conferences, moderators at scientific conferences, etc. They have participated as invited lecturers at scientific and professional meetings in Serbia and abroad, at which they presented their introductory and invited lectures.



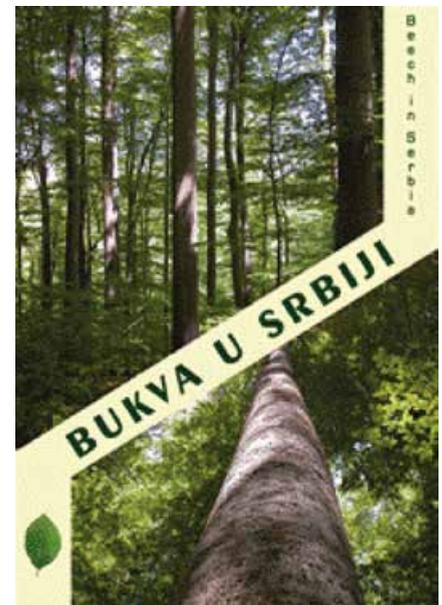
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7 Sample plot for forest regeneration

8 Sample plot for forest tending

9 Application of Femelschlag in forest regeneration

10 Cover of the monograph *Beech in Serbia*



11,12 Defense of a doctoral dissertation from the NSF Silviculture

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During the long history of the Faculty, professors of the Chair have occupied important positions at the University of Belgrade and the Faculty of Forestry. Prof. Dr. Toma Bunuševac was one of the founders of the independent Faculty of Forestry in 1949, as well as of the Department of Residential Greening in 1960. Prof. Dr. Toma Bunuševac and Prof. Dr. Nikola Jović were Vice-Rectors of the University of Belgrade. Prof. Dr. Milun Krstić was Vice-President of the Council of Biotechnical Sciences of the University of Belgrade. Deans of the Faculty of Forestry were Prof. Dr. Toma Bunuševac, Prof. Dr. Branislav Jovanović and Prof. Dr. Nikola Jović, and vice-deans were Prof. Dr. Stevan Jovanović and Prof. Dr. Ljubivoje Stojanović. Heads of the Department of Forestry were Prof. Dr. Nikola Jović and Prof. Dr. Ljubivoje Stojanović. Teachers of the Chair are members of several professional and expert organisations and associations in the country and abroad, such as the IUFRO Division 1 Silviculture.

So far, the Chair of Silviculture has given a huge contribution to the education of forest professionals from Serbia and the entire region. A large number of papers and theses have been defended as graduation papers, final papers, master's degree theses, specialist and Master of Science papers and doctoral dissertations with topics in the field of silviculture and forest ecology. The numbers of defended papers or theses in the scientific field of silviculture, under the mentorship of teachers from the Department, are more than 220 graduation papers, 3 specialist papers, 21 Master of Science theses and 10 doctoral dissertations. Since the introduction of the Bologna system of education, 21 final papers and 29 master's theses were defended. The first final paper at the Faculty of Forestry in the Bologna system of education was written and defended in the narrow scientific field of silviculture (Vasić Vladimir, 2010), and the first master's thesis also from the narrow scientific field

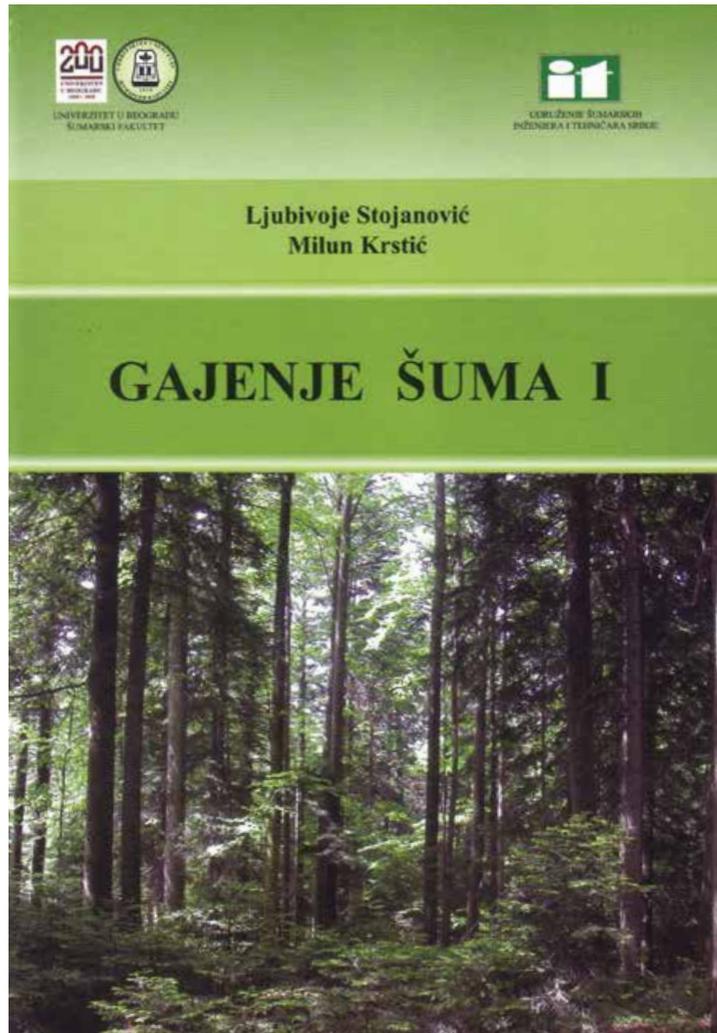
of silviculture (Keren Srđan, 2010). Members of the Chair were also members of a large number of commissions for the evaluation and defense of graduation papers, final papers, specialist papers, master's theses, Master of Science theses and doctoral dissertations, as well as of commissions for election to scientific and educational titles in this country and abroad.

Over a certain period, the following textbooks and other materials were published in subjects of the narrow scientific field of silviculture: 14 textbooks and nine course packets or authorised collections of lectures, four practice books, workbooks for exercises, and prepared multimedia content in the form of presentations. The basic information about the titles, authors of the textbooks, years and place of publication are shown in the following overview: On thinings (1929): Josip Balen, Zagreb; Reforestation and Silvicultural Techniques (1950): Toma Bunuševac, Faculty of Forestry, Belgrade; Silviculture I (1951): Toma Bunuševac, Naučna knjiga, Belgrade; Silviculture - Methods of Natural Regeneration and Tending of Forests (1980): Stevan Jovanović, Naučna knjiga, Belgrade, (reprint 1988); Silviculture III - Forest Regeneration and Tending of the Main Tree Species (2000): Ljubivoje Stojanović and Milun Krstić, Finegraf, Belgrade; Silviculture - Conversion, Amelioration and Artificial Regeneration (2006): Milun Krstić, Planeta print, Belgrade; Silviculture - Methods of Natural Regeneration and Tending of Forests (2008): Ljubivoje Stojanović and Milun Krstić, Planeta print, Belgrade; Silviculture of Special-Purpose Forests (2016): Zoran Govedar and Milun Krstić, GrafoMark, Banja Luka; Meteorology (1949, several reprints, last reprint in 1990): Marko Milosavljević, Naučna knjiga, Belgrade; Climatology (1963, last reprint in 1990): Marko Milosavljević, Naučna knjiga, Belgrade; Forest Ecoclimatology - Microclimate of Forest Habitats (1978): Borislav Kolić, Naučna knjiga, Belgrade; Forest Ecoclimatology with the Fundamentals of Physics of the Atmosphere (1988):



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Borislav Kolić, Naučna knjiga, Belgrade; Forestry Ecoclimatology (1995): Petar Gburčik, University of Belgrade - Faculty of Forestry, Belgrade; Forest Ecoclimatology (2005, reprint in 2014): Miroslava Unkašević, University of Belgrade - Faculty of Forestry, Belgrade; Forest Ecoclimatology, Climate of Forest and Urban Areas of Serbia, practice book (2019): Violeta Babić and Miroslava Unkašević, University of Belgrade – Faculty of Forestry, Belgrade.



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13 Cover of the textbook of silviculture

Cooperation with other institutions

In the past period, cooperation has been achieved with many domestic and international institutions and organisations. Among the domestic institutions, cooperation was particularly achieved with the Ministry of Education, Science and Technological Development of the Republic of Serbia and Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia through the implementation of projects.

Cooperation has been established with other faculties and institutes in the country and abroad, of which stands out the cooperation with the University of Belgrade - Faculty of Physics, Faculty of Biology, Faculty of Geography, Faculty of Agriculture, University of Ljubljana - Biotechnical Faculty, University of St. Kiril and Methodius - Faculty of Forestry from Skopje, the Faculty of Forestry of the University of Banja Luka, the Faculty of Forestry in Sofia, the Faculty of Forestry in Zagreb, etc. Other scientific institutions that cooperation has been achieved with are the Institute of Forestry in Belgrade, Institute of Lowland Forestry and the Environment from Novi Sad, and the Jovan Cvijić Geographical Institute of SASA. This cooperation has enriched members of the Chair with valuable experiences that motivated them to raise the standards of their scientific work, and nurture and expand cooperation that remains our constant orientation.

In the past period of existence and work, the Chair has established intense cooperation with the forest economy through the activities of teachers and associates on its improvement and the realisation of cooperation projects with the following enterprises: PE Srbijašume, and particularly with FE Beograd, FE Timočke šume, FE Užice, FE Niš, FE Severni Kučaj, FE Stolovi, FE Kruševac, as well as PE Vojvodinašume – FE Sremska Mitrovica and Fruška Gora, Đerdap and Kopaonik National Parks. Members of the Chair were presidents of boards of the



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Institute for Nature Conservation of Serbia, Tara NP and Institute of Forestry of Serbia, or members of management boards of PE Srbijašume and the Association of Forestry Engineers and Technicians of Serbia.

In many cases, members of the Chair of Silviculture were the initiators and made a significant contribution to the scientific and professional development of forestry in Serbia and beyond by organising a large number of scientific meetings and seminars for forest economic circles, through studies and surveys and participating in them. In cooperation with the economic circles, and at the initiative of the Chair of Silviculture headed by prof. Dr. Ljubivoje Stojanović, and with the participation and realisation of experts from the Chair and teachers of specialised subjects of the Chair, 10 seminars were held in the field of forestry on the topics of - silviculture, namely: "Thinning in Beech Forests", Boljevac, 1994, "Thinnings in Artificially Established Stands of Black and White Pine in the Area of Užice", Šargan, Užice, 2002, "Management in Beech Forests", Brezovica - Bor, 2003, "Management in Degraded (Coppice) Beech Forests", Ozren - Sokobanja, 2004, "Management of Sessile Oak Forests", Majdanpek - Donji Milanovac, 2005, "Management in Special-Purpose Forests", Trstenik - Vrnjačka Banja, 2006, "Selective Management in Mixed Forests of Fir, Spruce and Beech" on Mt. Zlatar, 2008, "Thinnings in Pine Plantations", Divčibare - Bukovi, 2008 and Seminar/roundtable "Regeneration of the Forests of Hungarian Oak and Turkey Oak" Lipovica, Belgrade, 2013. A total of five regional seminars were also held in 2000, with the topic "Natural Regeneration of Beech Forests" in the areas of Severni Kučaj, Kukavica, Stolovi, Cer – Vidojevice and Tara.

Selected projects

A special segment of the work is research related to the development of 63 scientific research projects from the field of silviculture, of which 10 are international projects, in which members of the Chair were project leaders or researchers. Domestic projects were financed by: the Republic Science Association of Serbia, Ministry of Science and Technological Development, i.e. Ministry of Education, Science and Technological Development of the Republic of Serbia, Ministry of Agriculture, Trade, Forestry and Water Management, i.e. Ministry of Agriculture and Environmental Protection of the Republic of Serbia - Forest Directorate, Provincial Secretariat for Agriculture, Water Management and Forestry, Self-Management Community of Interest for Forestry of Serbia, Basic scientific associations, Self-Management Communities of Interest of the Regions of Užice, Podunavlje and Zaječar and Budget Fund for Forests of the Republic of Serbia.

- “Production of trees to meet the growing needs of the market - high beech forests”, Ministry of Science and Environmental Protection of the Republic of Serbia (2002–2004)
- “Production of wood in coniferous beech forests to meet the growing needs of the market”, Ministry of Science and Environmental Protection of the Republic of Serbia (2002–2004)
- “High Oak Forests”, the Ministry of Science and Environmental Protection of the Republic of Serbia (2005–2007)
- “Improvement of the production of wood assortments in coppice oak forests”, Ministry of Science and Environmental Protection of the Republic of Serbia (2005–2007)
- “Ecology and technique of natural regeneration of Pedunculate oak stands in the context of their conservation and close-to-nature forest management”, Ministry of Science and Environmental Protection of the Republic of Serbia (2005–2006)
- “Selection of appropriate silvicultural measures in pine crops in order to maximise the production of quality wood and sustainable development”, Ministry of Science and Environmental Protection of the Republic of Serbia (2008–2010)
- “Monitoring of the structure and growth of pedunculate oak stands on permanent sample plots in Slavonia and Srem”, Ministry of Science and Environmental Protection of the Republic of Serbia (2009–2010)
- “Regeneration of beech forests in difficult conditions for regeneration”, Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia (2010–2011)
- “Research of the ways and possibilities of Sessile oak regeneration in Serbia”, Ministry of Agriculture and Environmental Protection (2014–2016)
- “Defining measures for the biological control of the tree of heaven spread and revitalisation of endangered stands in the area Fruška gora NP (*Ailanthus altissima*/ Mill./ Swingle)”, Ministry of Agriculture and Environmental Protection of the Republic of Serbia (2015–2016)



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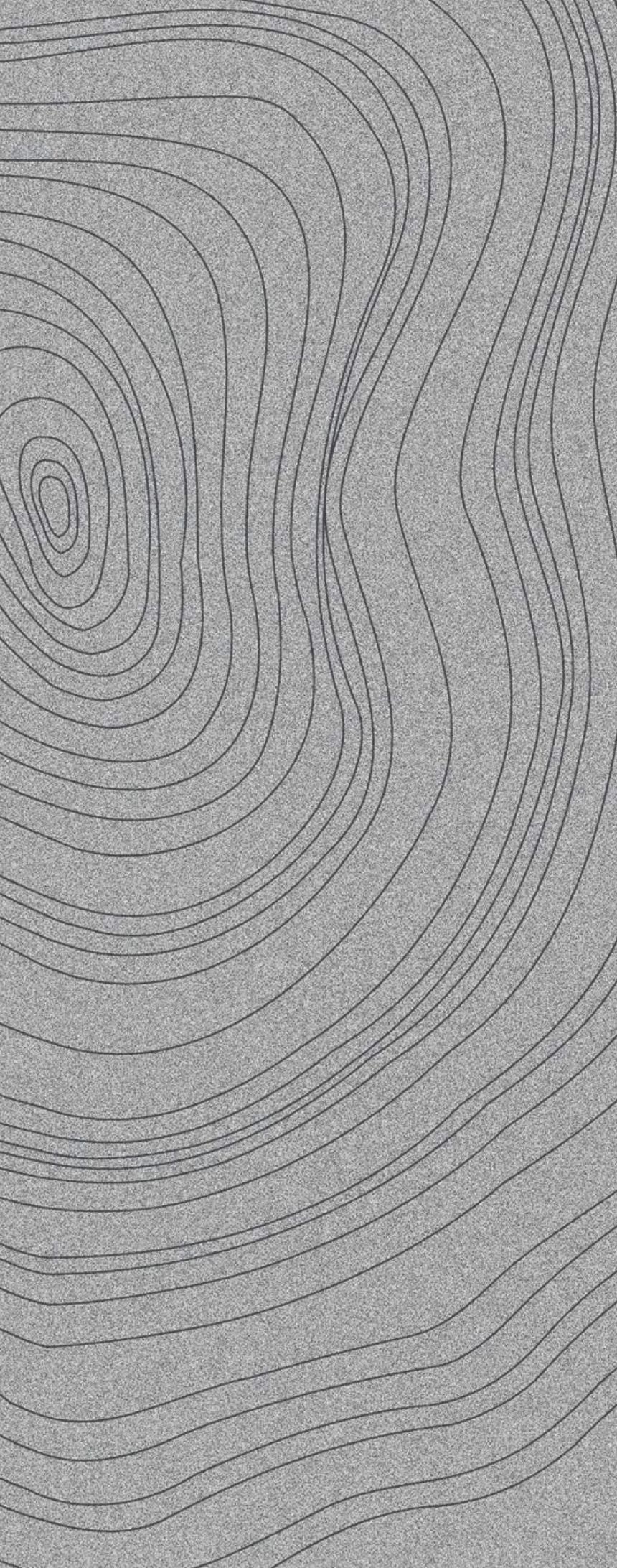
14 A seminar in silviculture for forest operators

15 A visit of the “ProSilva Europe” delegation to Serbia

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CHAIR OF FOREST PROTECTION

Text drawn up by:
Dr. Čedomir Marković, Full Professor

Brief history

The Chair of Forest Protection is as old as the University of Belgrade - Faculty of Forestry. In the course of its history, it has changed its name several times (Chair of Forest Protection, Chair of Forest and Wood protection, Chair of Forest, Wood and Ornamental Plants Protection). The first Head of the Chair was academician Prof. Dr. Svetislav Živojinović. So far, there have been four generations of professors and the fifth one has started its development. The professors who belonged to the first generation were academician Dr. Svetislav Živojinović, academician Dr. Mladen Josifović, Dr. Mihailo Krstić and Dr. Konstantin Vasić, and to the second one Dr. Dragić Tomić, Dr. Pribislav Marinković, Dr. Nenad Petrović, Dr. Mihailo Petrović, Dr. Dragutin Živojinović and Dr. Milomir Vasić. The third generation of professors included Dr. Ljubodrag Mihajlović, Dr. Dragan Karadžić, Dr. Milenko Mirić, Dr. Milka Glavendekić and Dr. Tanja Milijašević. The fourth generation of professors includes Dr. Čedomir Marković, Dr. Nenad Keča and Dr. Slobodan Milanović and the fifth one, which is currently beginning its professional development, Dr. Ivan Milenković and Master Eng. Jovan Dobrosavljević. Since its founding until today, together with all of them, the Chair has employed the following staff and laboratory technicians: Marija Šiletić, Graduate Forest Engineer, Branko Užičanin, Graduate Forest Engineer, Božidar Pavlović, Graduate Agricultural Engineer, Rajko Rašić, Graduate Agricultural Engineer, Aleksandar Stojanović, Graduate Agricultural Engineer, Vladan Lukić, Graduate Agricultural Engineer, Ivana Milošević, Graduate Agricultural Engineer and associates in higher education, Snežana Mudrinić, Graduate Forest Engineer and Petar Vujičić, Graduate Forest Engineer. In addition, Professor Dr. Dragiša Gavrilović, and teaching assistant Dr. Vladimir Vujanović also worked at the Chair for some time, as well teaching assistant Dr. Milan Milenković and Graduate Engineer Panta Vukašinić.

CHAIR STAFF:

Teaching staff

Dr. Čedomir Marković,
Full Professor, Head of Chair

Dr. Slobodan Milanović,
Associate Professor

Dr. Ivan Milenković,
Assistant Professor

Jovan Dobrosavljević,
Master Forest Engineer, Teaching Assistant

Professional-technical associates

Snežana Mudrinić,
Graduate Forest Engineer,
Associate in Higher Education

Petar Vujičić,
Graduate Forest Engineer,
Associate in Higher Education

Very soon after its establishment, the Chair of Forest Protection became the most significant forest protection centre in former Yugoslavia. Thanks to the great efforts and work of the professors working at the time, a good 'School of Forest Protection' was formed, attended by forest protection professionals from the entire former SFRY.

Since at that time there were not many available textbooks in the field of forest protection the first textbooks written at the Chair were Forest Phytopathology (1951) (author academician Prof. Dr. Mladen Josifović) and Forest Protection (1957) (author) academician Prof. Dr. Svetislav Živojinović). They also equipped the laboratories, made an insectarium, initiated the creation of entomological and phytopathological collections, established cooperation with economic entities, and the Chair staff travelled abroad (to England, Scotland, Russia, Germany, etc.) to improve their knowledge. From year to year the Chair was gradually developing and slowly becoming what it is now - a Chair which participates in teaching at all levels of study, has well-trained staff, large and rich collections, research centres and laboratories, an insectarium, modern textbooks and handbooks, good international cooperation and scientific papers published in the home country and abroad.



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1 Academician
Prof. Dr. Svetislav
Živojinović
(1907-1966)

Since its establishment until today the numbers of papers and theses defended at the Chair of Forest Protection are: 51 graduation paper, 28 final papers, 44 Master of Science theses, 16 Master's theses and 35 doctoral dissertations. The quality of defended doctoral dissertations is quite high, which is confirmed by papers published in leading journals abroad. The cooperation of the Chair with other forestry faculties and institutions in Europe (in Czech Republic, Poland, France, Sweden, Spain) allows doctoral students and the Chair staff to do one part of their research in laboratories abroad and thus solve the problem of the lack of adequate conditions at the Chair. In addition, there are two laboratories at the Chair of Forest Protection (Laboratory for Forest Entomology and Laboratory for Forest Phytopathology) and one research centre (Forest Fire Research Centre), which are used for teaching, scientific research and professional work.

According to the 2013 accreditation of the Faculty of Forestry, the Chair of Forest Protection has three compulsory and two elective courses in the study programme of undergraduate academic studies of Forestry. The compulsory courses are: Forest Entomology, Forest Phytopathology and Forest Protection, and the elective courses include: Monitoring of the Health of Forests and Forest Xylophagous Insects and Lignicolous Fungi. The master's degree study programme of Forestry has a special module dedicated to the protection of forests and ornamental plants. It includes three compulsory and five elective courses. The compulsory courses are Methods and Techniques of Research in Forest Protection, Integral Forest Protection and Phytopharmacy. The elective subjects are Forest Entomology 2, Horticultural Entomology, Forest Phytopathology 2, Horticultural Phytopathology and Forest Fire Protection. The Chair of Forest Protection has eight elective courses in doctoral studies within the submodule Forest protection. Those courses are Forest protection, Biological Forest Protection,



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2 Current staff of the
Chair of Forest Protection
(from left to right: Dr.
Ivan Milenković, Assistant
Professor, Prof. Dr.
Slobodan Milanović,
Master Forest Eng. Jovan
Dobrosavljević, Graduate
Forest Eng. Snežana
Mudrinić, Associate, Prof.
Dr. Čedomir Marković and
Grad. Forest Eng. Petar
Vujičić, Associate)



3

3 Students
attending a lecture in
Forest protection

Applied Zoology, Forest Entomology, Forest Xylophagous Insects and Lignicolous Fungi, Forest Phytopathology, Forest Mycology and Phytopharmacy.



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4 Field classes
of Forest
Phytopathology

5 Entomological and
phytopathological collection

6 The Laboratory for
Forest Entomology

7 The Laboratory for
Forest Phytopathology

8 Insectarium



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Scientific research and professional activity

Scientific research at the Chair of Forest Protection is conducted in the field of forest entomology, forest phytopathology and forest protection. As part of research in the field forest entomology the following is investigated: the development, population density and natural enemies of harmful forest insects and methods of their control, the fauna of certain insects groups and the influence of various factors on the change of insect diversity in forests and urban areas. Research in the field of Forest Phytopathology includes the study and molecular identification of causative agents of diseases in forest ecosystems (mycoses, bacteriosis, and viroses) and ways to control them. As part of research in the field of forest protection, the investigated items are also forest fires, and the impact of abiotic factors on forest health and interactions between woody plants and pests significant for forestry.

Since its founding, the Chair of Forest Protection has established a good cooperation with the economy. That is why it participated in the implementation of a large number of actions to combat harmful organisms. When we talk about them, we can say that from the founding of the Chair until today, there have been no great actions of pest control in forestry in which the Chair of Forest Protection was not involved. Under direct leadership of professors from the Chair, actions were carried out to control gypsy moth, mottled umber, leaf-roller, bark beetles, pine sawfly, grasshopper, chestnut canker, Dutch elm diseases, etc. In addition, for the needs of the economy, the Chair has also implemented many projects related to the study of causing agents of forest degradation, insect fauna, diversity of fungi and staff education. In addition, for several public companies in Serbia, the Chair has also implemented projects related to the assessment of the health status of trees in public and protected areas. Lately, for the needs of different

managers, the Chair also performs phytosanitary control of protected natural assets.

In addition to cooperation with the economy, since its founding, the Chair of Forest Protection has established a good cooperation with ministries of the Republic of Serbia and former Yugoslavia. Due to that cooperation, the Chair has implemented many projects. Since its laboratories are accredited, the Chair has also provided various services to the ministries (health control of plants in forest and ornamental plant nurseries, health control of seed forests, testing of biological efficacy of plant protection products etc.). As experts in their fields, members of the Chair were often appointed members of working groups and commissions that issued permits, drafted regulations and organised actions to control harmful organisms in forests of Serbia.

All the above activities of the Chair of Forest Protection have resulted in the publication of a large number of papers in scientific and professional journals in the country and abroad. The results of various types of monitoring show that in terms of the number of published papers and citations in international journals from the SCI list, the Chair of Forest Protection is one of the leaders at the Faculty of Forestry. Its members have very intense international cooperation, and this trend is likely to continue. It is also important to say that in recent years, members of the Chair have worked a lot on publishing new textbooks, handbooks and monographs. In 2008, a new textbook on Forest Entomology was published (author Lj. Mihajlović), and in 2010 on Forest Phytopharmacy (authors V. Janjić, Č. Marković, N. Keča) and Forest Phytopathology (author D. Karadžić), in 2016 on Forest Mycology (authors D. Karadžić, N. Keča, I. Milenković, S. Milanović, Z. Stanivuković), in 2019 on Diseases of Ornamental Plants



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(authors D. Karadžić, V. Golubović Ćurguz, I. Milenković), and in 2011 A Handbook of the Reporting, Diagnostics and Forecast Forest Protection Service (authors D. Karadžić, Lj. Mihajlović, S. Milanović, Z. Stanivuković).



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9 Research of insect fauna

10 Research of tree disease-causing agents

11 Research of forest fires

12 Health inspection of trees in public areas



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Cooperation with other institutions

The Chair of Forest Protection has always had intense cooperation with scientific institutions at home and abroad. When it comes to scientific institutions in the country, they are primarily the Natural History Museum in Belgrade, Faculties of Agriculture and Biology of the University of Belgrade, Faculty of Sciences in Novi Sad, Institute of Forestry in Belgrade, Institute of Lowland Forestry and the Environment in Novi Sad, Siniša Stanković Institute for Biological Research in Belgrade, Dr. Josif Pančić Institute for the study of medicinal herbs in Belgrade and Institute for Multidisciplinary Research of the University of Belgrade. In addition to them, for the purpose of teaching, the implementation of various scientific and professional projects, and forest health controls in the country, the Chair closely cooperates with the public enterprises Srbijašume and Vojvodinašume, public utility company Zelenilo Beograd and Tara, Kopaonik, Fruška gora and Iron Gate national parks.

When institutions from abroad are concerned, the Chair of forest protection works closely with the University of Banja Luka - Faculty of Forestry, Agricultural Faculty of the University of East Sarajevo, Faculty of Forestry and Wood Technology of the Mendel University in Brno (Czech Republic), Faculty of Forestry and Wood Science of the University of Science in Prague (Czech Republic), Faculty of Forestry of the University of Istanbul (Turkey), Faculty of Forestry of the Poznan University of Life Sciences (Poland), Faculty of Engineering in Agriculture and Forestry of the University in Extremadura (Spain), National Institute for agronomic research in Bordeaux (France), Department of Ecology, Environment and Plant Sciences of the University of Stockholm (Sweden), Department of Plants and Soil of the University of Aberdeen (Scotland), the Norwegian Institute for Bioeconomic Research in Oz, etc.

The cooperation with these institutions is realised through teacher mobilities, the implementation of joint projects, exchange

of experience, information and materials for different research needs, participation in commissions for the defense of doctoral dissertations and publishing of joint scientific papers. With the University of Banja Luka - Faculty of Forestry, Faculty of Agriculture of the University of East Sarajevo and the Faculty of Forestry and Wood Technology of the Mendel University in Brno, the cooperation has also been achieved through the engagement of professors from the Chair in teaching. In addition to cooperation with these institutions, employees of the Chair of Forest Protection collaborate intensively with many journals at home and abroad as members of editorial boards or reviewers. For example, in the country these are the journals *Acta Entomologica Serbica*, *Biljni doktor*, *Bulletin of the Faculty of Forestry and Forestry*, and abroad *Acta Scientiarum Polonorum: Silvarum Colendarum Ratio et Industria Lignaria*, *Annals of Forest Research*, *Baltic Forestry*, *European Journal of Plant Pathology*, *Forest Pathology*, *New Zealand Journal of Forest Science*, *South-East European Forestry*, *Bulletin of the University of Banja Luka - Faculty of Forestry and Scientific Papers of the Faculty of Forestry in Sarajevo*.

The staff of the Chair of Forest Protection are members of many associations, societies and international organisations (Association of Forestry Engineers and Technicians of Serbia, Association for Plant Protection of Serbia, Entomological Society of Serbia, Entomological Society of America, various IUFRO groups, etc.). Thanks to that, the Chair of Forest Protection participated in the organisation of a large number of congresses, scientific meetings and conferences.

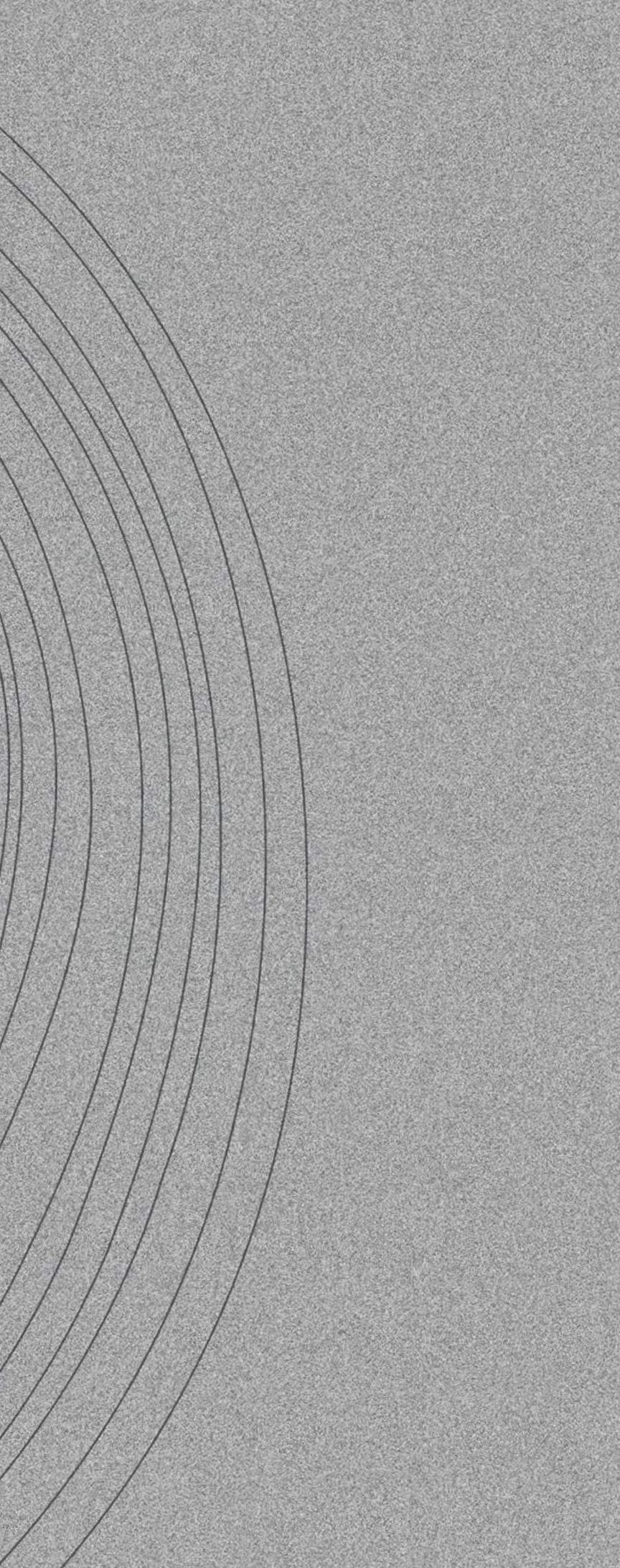
Selected projects

- “The monitoring of the number of bark beetles *Ips typographus* (L.) and *Pythiogenes chalcographus* (L.) by setting up a network of pheromone traps”, Public company *Kopaonik National Park* (2006–2008)
- “The occurrence and role of Phytophthora species in oak forests decay in Serbia”, Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia, Belgrade (2010–2011)
- “Application of modern knowledge in the field of forest entomology, nursery practice and afforestation in forest protection, production of forest planting material and afforestation”, Ministry of Agriculture, Trade, Forestry and Water Management of the Republic of Serbia (2011–2012)
- “A study of pathogens in coniferous crops in Serbia”, Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia (2011–2012)
- “A study of the fauna and significance of the bark beetles of Serbia”, Ministry of Agriculture, Trade, Forestry and Water Management of the Republic of Serbia (2012–2014)
- “A study of the causes of beech bark disease in natural and coppice beech forests in Serbia”, Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia (2012–2013)
- “Phytopathological elements of Turkey oak and Pedunculate oak forest dieback in the area of Vojvodina - the consequences of extreme 2012 drought”, Provincial Secretariat for Agriculture (2015)
- “The role of pathogens in the degradation of oak forests in the area of the Public enterprise Vojvodinašume”, Public enterprise Vojvodinašume (2012–2015)
- “Ectomycorrhisation of seedlings in forest nursery production in Montenegro”, Ministry of Science of Montenegro (2012–2015)
- “Monitoring of the health status of forests with a special view to the consequences of the icebreak in the Stara PLanina Nature Park (Zaječar district)”, Public company Srbijašume (2017–2018)

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CHAIR OF FOREST RESOURCES UTILISATION

Text drawn up by:
Dr. Milorad Danilović, Full Professor

Brief history

In the early 1930s four forestry institutes were formed at the Faculty of Agriculture and Forestry. One of them was the Forest Utilisation Institute, and one of the five cabinets was the Cabinet for Forest Transportation and Agricultural and Forest Construction. In 1949, the Faculty of Forestry became an independent institution, and then the teaching and scientific disciplines were organised by chairs. Among them the Chair of Forest Utilisation was established, with the following subjects: Forest Utilisation, Mechanical Wood Processing, Wood Technology, General and Forest Machinery and Hunting Economy, as well as the Chair of Forest Transport and Construction, with the following subjects: Forest Transportation Facilities, Forestry Construction, Technical Mechanics, Descriptive Geometry and Higher Mathematics.

In the years that followed, these two Chairs were merged or separated, and the number of subjects increased or decreased.

In the establishment and work of the Faculty of Forestry and its Chairs great contribution was given by many teachers, associates and support technical staff of the Chair. Since the very beginning of work of the Faculty of Agriculture and Forestry, headed by Prof. Dr. Đoka Jovanović as one of its founders to this day, the basic motto has been to improve the educational process and the forestry profession in general. Teachers of the basic teaching and scientific field, after which the Chair of Forest Resources Utilisation was named have made a great contribution to the establishment, development and affirmation of the Faculty of Forestry in Belgrade and the forestry profession in general. Dr. Đoka Jovanović, who graduated from the Faculty of Forestry in Tübingen in 1900, where he also earned his doctoral title, participated in the activities of the establishment of the Faculty of Agriculture and Forestry in the late twenties of the last century.

CHAIR STAFF:

Teaching staff

Dr. Milorad Danilović,
Full Professor, Head of Chair

Dr. Nenad Ćuprić,
Full Professor

Dr. Dragan Gačić,
Associate Professor

Dr. Vukan Lavadinović,
Assistant Professor

Dr. Dušan Stojnić,
PhD Teaching Assistant

Professional-technical associates

Slavica AntoniĆ,
Master Engineer,
Associate in Higher Education

Vladimir Ćirović,
Master Engineer,
Associate in Higher Education

Milan Ostojić,
Master Engineer,
Associate in Higher Education

With the establishment of the Wood-Industrial Department at the Faculty of Forestry the chairs were also reconstituted. In addition to the above two Chairs, the Chair of Forest Utilisation was also established.

In 1961, two Chairs were again established with disciplines that provide the technical - technological component of forest science and profession. The established chairs were the Chair of Forest Utilisation and the Chair of Basic Technical Subjects.

This or similar organisation remained until 1977, when the above-mentioned Chairs were reunited into the Chair of Forest Utilisation.

During that period, some teaching disciplines disappeared either as a consequence of a change in the curriculum or as



1 Dr. Đoka Jovanović

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a consequence of the transfer of some subjects, such as e.g. Hunting Economy to other chairs. In 1983, the Chair was expanded with new subjects.

In the years that followed, the structure of the Chair of Forest Utilisation was largely retained, until the introduction of the new, Bologna system of education, which brought about novelties, such as: the recomposition of teaching disciplines, the introduction of compulsory and elective courses, the reorganisation of multilevel education, etc. All of this resulted in the current structure of the Chair of Forest Resources Utilisation (in 2019, the Chair of Forest Utilisation changed its name to the Chair of Forest Resources Utilisation).

A number of teachers, associates and technical staff participated in the work and development of the Chair, as well as the Faculty, since their establishment.

At the very beginning, Prof. Dr. Đoko Jovanović contributed to the establishment of the Faculty of Agriculture and Forestry. He taught Forest Utilisation and Elements of Machines and Installations. Engineer Milan Mužinić was a teacher at the same time, and he taught the subjects of Forest Establishment and Silviculture, Hunting and Construction of Roads and Bridges. In 1924, eng. Miloš Stefanović was elected to the title of lecturer, and to the title of associate professor in 1928, for the subjects Fundamentals of Technical Mechanics and Construction of Forest Transportation Facilities.

Instead of Eng. Milan Mužinić, Dr. Josip Balen took over teaching in the subject of Hunting, and in addition he also taught Forest Establishment and Silviculture and Forest Protection.

In the period until 1930, the Chair hired its first teaching assistant, Eng. Vukašin Delić, for the subjects Forest Utilisation and Mechanical Wood Processing. Some time later, Eng. Borislav Davidović was elected and his duty were exercises in

the subject of Forest Utilisation. In 1938, Eng. Milutin Simonović was elected teaching assistant in Forest transportation facilities, Technical Mechanics and Geodesy.

The war and its circumstances stopped the activities of the Faculty, and it was also subject to destruction. It were mostly young assistants, and among them Eng. Milutin Simonović, who participated in the post-war renewal of the Faculty and classes. Somewhat later in 1946, Eng. Jovan Drakulić became a lecturer of the subject Forest Utilisation, and he stayed at the Faculty until 1949.

With the formation of an independent Faculty of Forestry, the hiring of teaching staff was intensified, so Eng. Vladislav Popović became a lecturer for the subject Forest Utilisation, and Eng. Sreten Nikolić became a teaching assistant for the subject Forest transportation facilities in 1958. Those four teachers built very successful professional careers, were promoted to the title of full professors, and timely retired.

After the retirement of Prof. Dr. Vladislav Popović in 1973, Grad. Eng. Petar Đoković became an assistant trainee for the subject Forest Utilisation. After defending his Master of Science thesis and being elected to the title of teaching assistant, he left the Faculty and joined the Poplar Research Institute in Novi Sad in 1979.

At the end of 1978, Grad. Eng. Draško Tičerić became a trainee assistant for the subject Forest transportation facilities, and at the beginning of 1980s the elected assistant trainee for the subject Forest Utilisation was Grad. Eng. Vojislav Bajić, who had until then worked in forestry for almost eight years.

The bad situation in the country in the 1990s made some of the teachers and associates leave the country and go abroad. Among them was Dr. Draško Tičerić, who was in the meantime elected Assistant Professor in the subject Forest transportation facilities.

The problems brought about by the circumstances affected the staff structure of the Chair in different ways. The vacant assistant trainee position for the subject of Forest Transportation facilities was filled by Grad. Eng. Bogdan Stefanović in 1993.

In 1983, a new subject– Forest machinery was introduced, and the teaching was entrusted to Prof. Dr. Sreten Nikolić, while the exercises were held by teaching assistant MSc Vojislav Bajić. In 1990, after obtaining his doctoral degree and the title Assistant Professor, Dr. Vojislav Bajić started to give lectures in the subject. In 1994, after being elected Associate Professor, Dr. Petar Đoković taught Forest machinery.

In the same year, Prof. Dr. Sreten Nikolić retired, and the teaching of Forest utilisation was taken over by Dr. Vojislav Bajić. In 1997, after spending five years working in forestry enterprises, Grad. Eng. Milorad Danilović, was employed at the position of assistant trainee in charge of the exercises in the subject Forest machinery.

At the end of 2006, after defending his doctoral dissertation, Dr. Milorad Danilović was elected assistant professor for



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the narrow scientific field of Forest utilisation, for the subject Forest Utilisation. After the retirement of Full Professor Vojislav Bajić, lectures of the compulsory courses of undergraduate studies Forest Utilisation 1, Forest Utilisation 2 and Use of non-timber forest products were taken over by Dr. Milorad Danilović, who has been a full professor since 2016. Since 2012, exercises in the subject have been entrusted to the teaching assistant Master eng. Slavica Antonić.

After the retirement of Prof. Dr. Mirko Lalić a staff discontinuity was created in the subject Forest Transportation Facilities. The problem was solved in 1999, by hiring Dr. Milorad Zlatanović, an Associate Professor of the Faculty of Civil Engineering in Niš, who has been teaching this subject to this day. By transferring Mr. Bogdan Stefanović to the position of a laboratory technician in 2011, exercises in Forest Transportation Facilities were entrusted to Grad. Eng. Dušan Stojnić, who in the meantime defended his doctoral dissertation and is now a PhD teaching assistant.

The sudden death of Prof. Dr. Petar Đoković in 2000 created a large gap in the teaching staff of the Chair. In the next four years, teaching of the subject of Forest machinery was entrusted to the teacher and associates of the subject Forest Utilisation.

In 2004, in agreement with the management of the Faculty of Mechanical Engineering, Dr. Nenad Ćuprić, who was assistant professor at the time transferred to the Faculty of Forestry, i.e. to the Chair of Forest Utilisation, where he is still teaching today.

In the post-war period, teaching of the subject of Hunting was entrusted to teachers of various forestry teaching disciplines. In the late 1960s, the teaching was entrusted to the lecturer Tiosav Stanojević, who also worked as the director of the 25th of May Museum. After he had left the Faculty, in the

mid-1970s, teaching was entrusted to Dr. Dušan Jović, who at the time was assistant professor in the subject of Forest management. In the late 1970s, more precisely in 1979, Grad. Eng. Mirko Lavadinović was elected assistant trainee for this subject. He soon earned his Master of Science title and intensively worked on his doctoral dissertation. In 1991, Mirko Lavadinović was tragically killed in the civil war. After that, the position of teaching assistant for this subject remained vacant for a long time. The exercises in this subject were in the meantime entrusted to some hunting professionals working in certain enterprises. It should be mentioned that Grad. Eng. Živko Radosavljević used to be in charge of exercises, and at the beginning of the last decade of the last century, teaching was entrusted to Dr. Vukoman Šelmić, director of the Lovoturs Company from Novi Sad, who was elected Associate Professor at the Faculty in 1998, after spending three years in a forest enterprise. The elected assistant trainee was Grad. Eng. Dragan Gačić. After the retirement of Prof. Dr. Vukoman Šelmić, the teaching position was entrusted to Dr. Zoran Popović, assistant professor at that time, on the basis of an agreement with the Faculty of Agriculture in Belgrade. In addition, the exercises were still held by MSc Dragan Gačić. With the adoption of the new Statute of the Faculty of Forestry in 2006, after 29 years, the subject of Hunting returned to the Chair of Forest Utilisation with a slightly modified name - Hunting with wildlife protection. The teaching of this subject was entrusted to Assistant Professor Dr. Dragan Gačić. In 2007, Grad. Eng. Vukan Lavadinović, was elected laboratory technician. After graduating from the Erasmus Mundus Master's degrees programme *European Forestry* he was elected teaching associate in 2010, and after defending his doctoral dissertation in 2016 at the Albert Ludwig University in Freiburg, he was elected assistant professor. During the schooling of Grad. Eng. Vukan Lavadinović abroad

Master eng. Predrag Ćirović was in charge of exercises, which were later taken over by Master eng. Andreja Lazović.

In the long period since the founding of the Institute and the Cabinet in the 1930s to the present day, numerous teachers and associates contributed to the development and affirmation of the Chair, and they are still doing it today. In addition to them, the efficient work of the Chair was enabled by numerous technical associates. Their names and our acknowledgements for their contribution to the Chair of Forest Resources Utilisation are listed below.

The teachers who taught subjects at the Chair were: Prof. Dr. Ranko Popadić, Prof. Dr. Ljubomir Letić, Prof. Dr. Zdravko Popović, Dr. Bojana Klačnja, Associate Professor, Prof. Dr. Siniša Stanković, Prof. Dr. Natalija Jovanović, Prof. Dr. Milutin Knežević, Prof. Dr. Momir Nikolić, Prof. Dr. Nada Lukić, Prof. Dr. Dragomir Stošić, Prof. Dr. Rade Zaplotnik, Prof. hab. Branko Petričić, Prof. hab. Milan Petrović, and Dr. Luka Glavaški, Assistant Professor.

Lecturers: Mechanical eng. Sava Odadžić, M.Sc. Radoje Banković.

Teaching assistants and assistant trainees: Mechanical eng. Boško Mijučić, Dr. Srđan Žikić, Assoc. Prof., Grad. Eng. Steva Barjaktarević.

Laboratory technicians who have completed their career at the Faculty of Forestry: Grad. Eng. Dušan Cvetković, Dragan Legerski, forest technician Ilija Bjelić, forest technicians Momčilo Parezanović and M.Sc. Jovica Grbić.

In addition to them, laboratory technicians in different periods were also geometer Risto Lazić, forest technician Đorđe Zorić, forest technician Sava Švedić, Grad. Eng. Mladen Laketić and Grad. Eng. Predrag Ćirović.

Today, the following associates are employed at the Chair: Master eng. Slavica AntoniĆ, Master eng. Milan Ostojić and Master Eng. Vladimir Ćirović.

Since the establishment of the Chair of Forest Resources Utilisation until 30 September 2019, hundreds of students graduated from the Chair, over 70 students defended their masters's degree theses, and 17 Master of Science theses and 8 doctoral dissertations were defended. In addition to teachers of the Chair teachers from the University of Skopje - Faculty of Forestry, University of Ljubljana - Biotechnical Faculty, University of Zagreb - Faculty of Forestry, etc. have participated in commissions for the defense of master's degree theses and doctoral dissertations in the field of Forest Utilisation and hunting with the protection of hunting wildlife.

In addition to the classes of undergraduate studies, classes at the Chair are held in master's degree and doctoral studies. The study programme of undergraduate studies contains the following subjects of the Chair which have the status of compulsory courses: Forest Utilisation 1 and 2, Use of non - wood forest products, Forest machinery, Hunting with Hunting Wildlife Protection and Forest Transportation Facilities. In addition

to the compulsory courses, classes are also held in elective subjects that belong to this Chair, namely: Safety at work in Forest Utilisation, Use of Hunting Fauna, Ichthyopotentials of Forest Areas and Forest Hydrology. In master's degree studies, within the module Use of forest and hunting resources, the following subjects that have the status of compulsory courses are: Research methods and techniques in the use of forest and hunting resources, Forest biomass for energy, Forest opening, Hunting grounds management planning. In addition to compulsory courses, classes are also held in elective courses which belong to this Chair, namely: the Collection and processing of non-wood forest products, Harmonisation of forest and hunting management, Forest construction and Water use in forest areas.

The following elective courses are available in doctoral studies within the module of Forest utilisation and hunting with hunting wildlife protection: Techniques and technologies in forest utilisation, Utilisation of forests under a special protection regime, Machinery in forest utilisation, Optimisation of forest road infrastructure, Organisation, technology and management of construction, Hunting grounds management planning, Wildlife breeding and Wildlife ecology.

There are 2 laboratories and 1 centre at the Chair, through which professional activities of the Chair members are implemented: the Forest Utilisation Laboratory, The Laboratory for Wildlife Management and the Forest Utilisation Centre. In addition to that, the Chair of Forest Resources Utilisation owns a large number of exhibits, tools and machines that were once used, as well as modern tools. It is important to note that a valuable collection of hunting trophies was formed, which is unique in higher education and scientific institutions of this country in terms of its content and significance. The collection is the result of many years of activities of Dr. Dragan Gačić and Master Eng. Milan Ostojić, and especially of the passionate hunters and donors Dušan Ćuturilo and Goran Kronja.

2 The classroom with exhibited tools and machines

3 The collection of hunting trophies

Scientific research and professional activity

Scientific research at the Chair is in accordance with the shares of individual disciplines. In terms of their character, scientific research can be divided into the research in the field of forest utilisation and hunting with hunting wildlife protection.

In the first group, research is conducted in the fields of techniques and technology of work on forest utilisation, use of non-timber forest products, forest machinery and forest road infrastructure, and in the second group in the field of hunting wildlife management.

Within the first group, research is conducted in the field of defining and applying different ways, methods and systems of work, the evaluation of the efficiency of work tools from different aspects (technical, economic, environmental and energy) in forest utilisation, the qualitative structure of assortments from the aspect of national and European quality standards, the improvement of planning, design and construction of forest roads and facilities on forest roads, the type and extent of damage in stands on the residual trees, regeneration and soil, as well as the impact of work tools on the health of workers through the measurement of noise, vibration, emissions of harmful gases, etc.

Special importance is given to the research of ecological acceptability of work tools in forest utilisation, as well as the development of methods and systems for the use of wood biomass in hilly-mountainous and lowland areas of Serbia.

In the field of hunting with hunting wildlife protection, a number of research studies have been produced on defining measures for the prevention of damage to wildlife due to irrigation canal lining in field hunting grounds of Vojvodina. In addition to that, a research of the causes of red deer (*Cervus elaphus L.*) disappearance in central Serbia was implemented and areas suitable for the reintroduction (settlement) of this indigenous species south of the Danube and Sava were defined.

Teachers of the Chair of Forest Resources Utilisation participated in the development of the Forestry Development

Strategy of the Republic Serbia, but also other important actions and development plans.

A special segment of professional work at the Chair was participation of its teachers in the commissions for drafting and adoption of Serbian standards for roundwood, as well as the current legal regulations in the field of hunting.

In the past period, the Chair achieved very good cooperation with the economy through the work of its teachers and associates. In professional terms, several hundred different projects, studies and expertises have been implemented for the needs of the economy. Numerous projects of construction and reconstruction of forest roads and forest bridge roads were implemented for public forest management companies, national parks, forest owners' associations and other forest users. Members of the Chair are often engaged in expertise and super expertise procedures in the field of forestry.

At the same time, forest enterprises are places for the field classes of students, production of graduation papers and master's theses as well as for data collection for the needs of doctoral dissertations.

Such numerous activities and rich experience of teachers and associates have resulted in a large number of scientific and professional papers, monographs and other scientific and professional publications. Since the founding of the Chair until today, teachers and associates of this Chair have published hundreds of scientific and professional papers in domestic and international journals and domestic and international conference proceedings, of which 25 articles were published in SCI-indexed journals. In addition, numerous monographs, textbooks and auxiliary textbooks were written by the teachers and associates of this Chair.



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4 Participants of the *Best Practices in Forest Road Engineering* training, Lavov Ukraine

5 Students in field classes, PE Vojvodinašume

6 Presentation of a new method of forest biomass use for energy

Cooperation with other institutions

In the past 98 years, fruitful cooperation has been achieved with numerous domestic and international institutions and organisations. When it comes to international organisations special emphasis is placed on cooperation with DAAD (German Academic Exchange Service), the United Nations through cooperation of teachers from this Chair in the Intergovernmental United Nations Platform for Biodiversity and Ecosystem Services (IPBES).

At the initiative of Prof. Dr. Dragan Gačić an Agreement of Cooperation was signed between the University of Belgrade - Faculty of Forestry and the University of Szent István from Hungary and intense cooperation has been developed by the Chair as a member of the international scientific groups (networks) of researchers: EUROMAMMALS (EUROBOAR group) and ENETWILD.

Teachers of this Chair have been participating in bodies engaged in FAO projects.

Domestic institutions and organisations which have excellent cooperation with the Chair are the Ministry of Education, Science and Technological Development of the Republic of Serbia and the Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia through the implementation of scientific research and development projects. Other institutions with which intense cooperation has been achieved are public forest management companies, national parks, the Chamber of Forestry Engineers of Serbia, the Institute for Standardisation of Serbia, hunting associations, the Swarovski Optik Company, forest owners' associations, etc.

The multidisciplinary character of the field studied and developed at the Chair of Forest Resources Utilisation predetermined cooperation with other faculties in the country and abroad, of which the ones that stand out are the University of Belgrade - Faculty of Agriculture, Faculty of Biology and

Faculty of Veterinary Medicine, University of Banja Luka - Faculty of Forestry, Mendel University Faculty of Forestry and Wood Technology in Brno, University of Ljubljana - Biotechnical Faculty, Faculty of Forestry of the Technical University in Zvolen, University of Zagreb - Faculty of Forestry, Josip Juraj Strossmayer University in Osijek - Faculty of Agriculture, University of St. Cyril and Methodius - Faculty of Forestry in Skopje, University of Sarajevo - Faculty of Forestry, PULS University - Faculty of Forestry in Poznan, Moscow State Forest University, Albert Ludwig University of Freiburg, University of Natural Resources and Natural Sciences BOKU from Vienna, etc. The Chair of Forest Resources Utilisation was the organiser of a number of national and international meetings. In cooperation with the company Tajfun, the Chair organised a meeting attended by about 1,000 participants from 19 states. In 2015, the Chair organised the 2nd International Conference *Forest Engineering of Southeast Europe*, which was attended by more than 80 participants. The Chair of Forest Resources Utilisation is the organiser of the annual seminar *Forest Engineering* held in the Goč TB, which brings together forest engineers from the forest utilisation sectors of Serbia and the Republic of Srpska.

A professional scientific meeting entitled 1st *Serbian Conference with International Participation on Hunting Wildlife Management and Protection: Red deer* (2017) was held within the SRBREDDEER project. It was attended by about 100 participants, and as many as 19 scientific papers on red deer were presented at this conference. In addition, several professional-scientific workshops were organised, such as a meeting of the Euroungulates network. This scientific meeting was organised in cooperation with *HA Tamnava* from Ub, and it was attended by 26 members of the Euroboar group from 18 countries.



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Such a dynamic and fruitful cooperation with domestic and international institutions and organisations has enriched members of the Chair with new knowledge and valuable experience, which largely motivated them to constantly raise the standards of their scientific and professional work. For that reason, nurturing and expansion of that cooperation remains our permanent orientation.

7 Participants of the Innovations in Forestry and Forest Machinery meeting

8 Participants of the 2nd International conference *Forest Engineering of Southeast Europe*

9 Participants of the professional-scientific hunting workshop

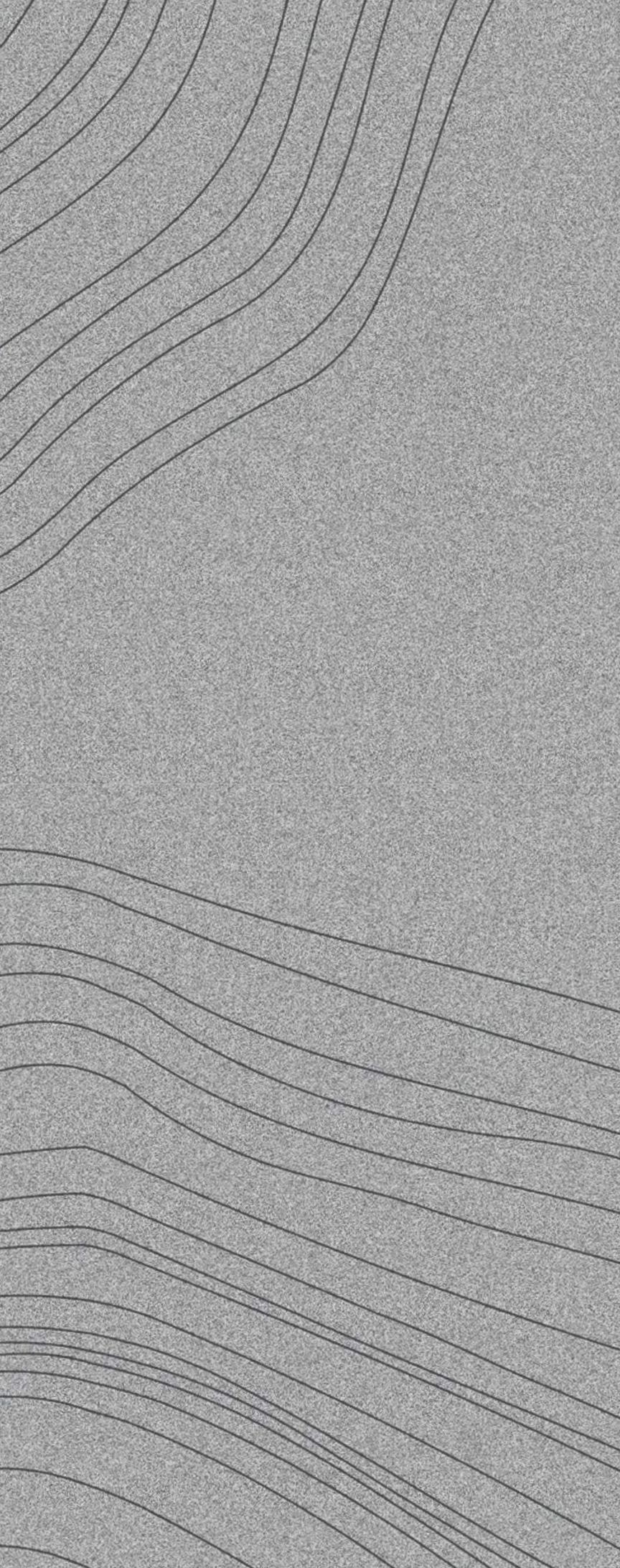
Selected projects

- “Standardisation of works in forestry with a special emphasis on the choice of technologies in PE “Vojvodinašume”, PE “Vojvodinašume” (2008–2019)
- “Monitoring of lined irrigation canals in field hunting grounds of Vojvodina”, Public Water Management company “Vode Vojvodine” (2009)
- “Modern techniques and technologies of forest utilisation”, Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia (2010)
- “Techniques and technologies for the use of forest residue in hilly and mountainous area of Serbia”, Ministry of Agriculture, Trade, Forestry and Water Management of the Republic of Serbia (2011–2012)
- “Research on the reintroduction of red deer in Serbia and the improvement of the newly established populations management”, Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia (2013–2014)
- “Choice of methods and systems of work when using random yields resulting from forest drying, icebreaks and icethrows in Serbia”, Ministry of Agriculture and Environmental Protection of the Republic of Serbia (2015–2016)
- “Investigation of the causes and consequences of the disappearance of red deer in central Serbia, defining areas suitable for reintroduction (settlement) and measures for the improvement of the reintroduction process - phase I”, project acronym SRBREDDEER, Ministry of Agriculture and Environmental Protection of the Republic of Serbia (2016–2017)
- “Defining of economically viable and environmentally friendly work systems and methods of wood assortment production in different operating conditions”, Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia (2018–2019)
- “Survey of the attitudes of hunters and hunting workers”, Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia (2018–2019)
- “Defining the methodology for determining the limit values of the dynamic modulus of deformation on forest roads”, Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia (2019)

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CHAIR OF FOREST MANAGEMENT PLANNING

Text drawn up by:
Dr. Damjan Pantić, Full Professor

Brief history

The Chair of Forest Management Planning has the longest tradition at the University of Belgrade - Faculty of Forestry. It was founded in 1920 within the Forestry Department at the Faculty of Agriculture in Zemun and it included two subjects: Science of Forest Management and Dendrometry.

Since that period until today, the Chair of Forest Management Planning has been changing dynamically, in accordance with the social changes (laws on higher education and statutes of the Faculty of Forestry), as well as in accordance with the development of forestry science and profession. In many cases the Chair itself was the initiator of scientific and professional development of forestry in Serbia and beyond its borders.

The education and scientific training of the first generation of professors of the Chair, primarily in the Czech Republic, Switzerland and Germany, resulted in a strong impact of Central European Forestry on the Scientific Development of the Chair.

The pioneering work at the Chair was done by eng. Aleksije Šenšin, who was elected a contractual full professor of the Faculty of Agriculture for the subject Forest Management and Calculation of Forest Values in the period from 1922 to 1924. He was hired at the Faculty until World War II. In the same period, the hiring of Dr. Ljubivoje Maletić contributed to the work of the Department.

In his major publications *Fundamentals of Forest Management* (1950 and 1951) and *Forest Management* (1954 and 1958), academician Prof. Dr. Žarko Miletić laid the foundations of planning in forestry, with numerous principles that are still used today. As a sign of respect for him and his work, the Faculty of Forestry in Brno (Czech Republic) named a part of its experimental forest after professor Miletić.

Professors Jovo Zubović, Dragoljub Mirković and Dragomir Milojković, also belonged to this generation whose professional

CHAIR STAFF:

Teaching staff

Dr. Damjan Pantić,
Full Professor, Head of Chair

Dr. Milorad Janić,
Full Professor

Dr. Branko Stajić,
Associate Professor

Dr. Nenad Petrović,
Assistant Professor

Dr. Biljana Šljukić,
Assistant Professor

Dr. Snezana Obradović,
Research Associate

Dr. Dragan Borota,
PhD Teaching Assistant

Marko Kazimirović,
Master Forest Engineer,
Teaching Assistant

Professional-technical associates

M.Sc. Dragomir Grujović,
Associate in Higher Education

Živan Janjatović,
Master Forest Engineer,
Associate in Higher Education

Biljana Pešić,
Graduate Forest Engineer,
Associate in Higher Education

Jasmina Vučetić,
Professional-Technical Associate
for Laboratory Work



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1 Academician
Prof. Dr. Žarko Miletić

work set foundations of Serbian forestry in the field of forest management planning (planning, forest inventory, increment science, geodesy, etc.).

Further development of the Chair was continued by professors Dušan Jović, Lazar Tomanić and Vukoman Šelmić in the field of forest management planning and hunting, Staniša Banković in the field of forest inventory, Vojislav Stamenković and Milivoj Vučković in the field of forest growth and productivity and Đorđo Lazić in the field of geodesy. In 1998, Dušan Jović was elected invited lecturer at the Faculty of Forestry in Moscow. At the same time, due to their worldwide scientific and professional reputation, professors Dušan Jović and Vukoman Šelmić had the status of international experts for hunting.

The work of the Chair and the successes it has achieved in the field of forest science and profession would be unimaginable without assistants and associates who were its members, such as: Mirko Lavadinović, Vlada Matić, Stevo Sekulić, Bogosav Mijajlović, Dragan Legerski, Borivoje Perišić, Aleksandar Vlajnić, Božidar Rajković, Vladimir Urošević, Zoran Sušić and Branko Mišić.

In 2002, an independent chair was formed from the Chair of Forest Management Planning, which is today known as the Chair of Bioeconomy, Policy and Governance in Forestry and Nature Conservation, and the subject Hunting with Hunting Wildlife Protection was transferred to the Chair of Forest Resources Utilisation in 2006.

The current generation of teaching staff at the Chair, i.e. professors (Milan Medarević, Damjan Pantić, Branko Stajić, and Milorad Janić), assistant professors (Nenad Petrović and Biljana Šljukić), teaching assistants and associates (Dragan Borota, Marko Kazimirović, Snežana Obradović, Dragomir Grujović, Biljana Pešić, Živan Janjatović and Jasmina Vučetić)

continue with the successful tradition of their predecessors. This is reflected in further development and modernisation of fundamental disciplines of the Chair and introduction of new scientific disciplines at all levels of study, such as management planning in protected areas, spatial analysis in forest management planning, forest growth modeling, dendrochronology, aerial photogrammetry and remote sensing in forest inventory, etc. The scientific work of the new generation of professors of the Chair is reflected in continuous research on contemporary issues of forest management planning, with results published in numerous domestic and foreign scientific journals and publications. As experts in their disciplines, professors of the Chair are members of numerous international associations, in which they actively participate by representing the interests of Serbian forestry.

Throughout its history, many deans who contributed to the development of all segments of the Faculty of Forestry came from the Chair of Forest Management Planning:

- 1953 - 1955 - Academician, Prof. Dr. Žarko Miletić
- 1955 - 1956 - Dr. Danilo Todorović
- 1958 - 1959 - Prof. Dr. Dragoljub Mirković
- 1963 - 1966 - Prof. Dr. Dragomir Milojković
- 1989 - 2000 - Prof. Dr. Dušan Jović
- 2010 - 2015 - Prof. Dr. Milan Medarević

So far, the Chair has given a huge contribution to the education of forest professionals in Serbia and the entire region.



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The current structure of undergraduate, master's degree and doctoral studies is as follows:

Undergraduate studies

Forest Management Planning, Dendrometry, Forest Growth and Productivity, Geodesy and GIS as compulsory courses and Protected Areas Management Planning and Production and Biomass Increment of Fast-Growing Forests and Plantations as elective courses.

Master's degree studies

Research Methods and Techniques in Forest Management Planning, Forest Management Planning, Forest Inventory and Fundamentals of Forest Growth Modelling are the compulsory courses, and the elective courses are Ecological Foundations of Forest Management Planning, Spatial Analysis in Forest Management Planning, Application of Aerial Photogrammetry and Remote Sensing in Forest Inventory and Production Programmes in the Function of Forest Management Optimisation as elective subjects.

Doctoral studies

The Methodology of Scientific Research and Techniques of Scientific Research are compulsory courses, while the courses Strategic Planning in Forestry, Ecological Foundations of Forest Management Planning, Forest inventory, Modern Technologies in Forest Inventory, Growth Dynamics of Trees and Forest Stands and Bioindication of Forest Vitality based on Tree Increment Characteristics of Trees and Stands - Dendrochronology – are elective courses that students choose according to the chosen topic of their doctoral dissertation.

Hundreds of graduation papers have been defended at the Chair, 27 Master of Science theses (period 1982-2016), 37 Master's theses (period from 2011 to 2018) and 28 doctoral dissertations (period from 1963 to 2019).

Organisationally, the Chair has three laboratories (centres), through which teachers and associates have practical part of their classes with students and implement scientific and professional projects. These are: the Laboratory for Increment Research and Biomonitoring, the Laboratory for Geodesy and GIS and the Centre for Monitoring, Inventory and Forest Management Planning.

2 Lectures given by professor Medarević during field classes

3 Lectures given by professor Vučković during field classes

4 Professor Pantić with colleagues from PE Vojvodinašume - Lectures on the application of modern technologies in forest inventory

5 Professor Stajić giving a lecture

6 Defense of a doctoral dissertation

7 Laboratory for geodesy and GIS

8 Professors and associates working with students in the Laboratory for increment research and biomonitoring

9 Practical work with students in the Laboratory for geodesy and GIS



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Scientific research and professional activity

The scientific and professional work of the Chair is multidisciplinary, but it can still be observed within the basic forestry disciplines covered by the Chair.

As part of their scientific engagement and professional activity, Professor Milorad Janić and his associate Dragomir Grujović work on the collection and processing of geospatial data, development of topographic maps, orthophoto plans and maps, development of GIS for forestry, processing and analysis of satellite images, as well as the development and implementation of CAD and GIS software. Professor Janić has received several awards for his professional and scientific work and the awards that stand out are:

- Charter of the Municipality of Čukarica as a sign of public recognition for results achieved in his work and improvement in the field of science, Belgrade, 1995;
- Gold medal with a ribbon from the World Salon of Inventions, research and new technologies *EUREKA 2000* for software solutions of the promoted GIS concept, Brussels, 2000;
- Gold medal with a ribbon from the World Salon of Inventions, research and new technologies *EUREKA 2001* for software solutions in the field of TT communication by applying GIS technologies, Brussels, 2001.

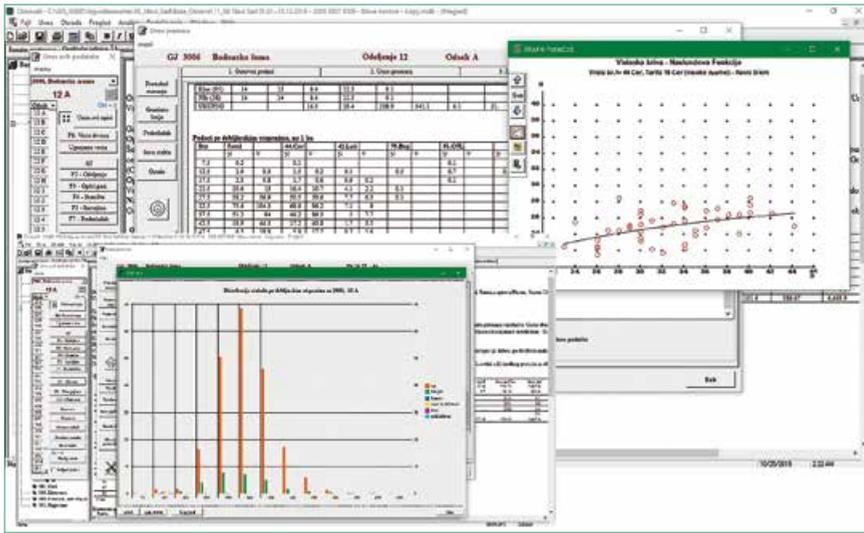
The Chair pays great attention to the forest inventory, both at the level of stands and the whole of Serbia (national inventory - NFI). In the 1980s, thanks to Professor Staniša Banković, the stand inventory of forests was set on statistical foundations. The degrees of homogeneity at the level of which measurement method, sample size and shape of the sample areas are defined are an expression of spatial and dimensional variability of trees in Serbian forests. This approach to the design of stand measurement enabled the selection of an optimal solution on the line scope of measurement-accuracy of results-costs



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of measurement. The defined concept soon experienced full affirmation in Serbian forestry, and today it is a standard approach in stand forest inventory. In parallel, first in FE Sremska Mitrovica started the development of the information system on forests in Serbia, authorised by professor Staniša Banković, a professor of the University of Belgrade - Faculty of Mathematics Duško Vitas and Professor Dušan Jović, during which the subsystem for forest management planning was brought into an operational condition (enables processing, analysis and presentation of forest inventory results, as a basis for the development of planning documents in forestry). Together with professors and associates of the subject Dendrometry and Forest Management Planning, and with the help of experts from the Norwegian Forestry Group (NFG) Professor Banković participated in designing the first national forest inventory of Serbia (NFI-1, 2004 - 2006). Experiences from the Serbian forest inventory, cooperation between Professor Damjan Pantić and PhD teaching assistant Dragan Borota within the European network of national forest inventories (ENFIN), cooperation with FRA/FAO and their active work in expert teams for the harmonisation of information of European NFIs, formed the basis for the design NFI-2 of Serbia, which started in 2019. It is a combined inventory (remote sensing and terrestrial survey), and a part of information collected is harmonised with FRA/FAO reference definitions. NFI-2 was created by Professor Dr. Damjan Pantić and PhD teaching assistant Dragan Borota, with the help of Professor Matthias Dees from the Department of Information Systems and Remote Sensing of the Albert Ludwig University of Freiburg, as well as colleagues from the subject of Forest Management Planning.

A special segment of the work of professors Banković, Jović and Medarević, and today Professor Pantić, is modelling of numerical elements of trees and stands (production of volumetric tables, diameter increment models, etc.), which is

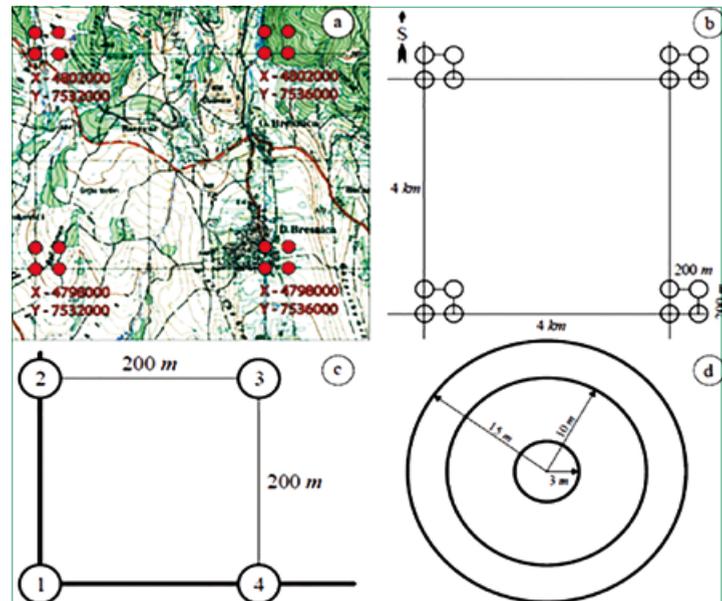


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extremely important for the forestry profession. For many years, professor Banković was hired as a visiting Professor of Dendrometry at the Faculty of Forestry of the University in Banja Luka. In 2016, Professor Damjan Pantić inherited his role. With the support of professor Damjan Pantić, teaching assistant Dr. Dragan Borota works intensively on studying the possibilities of collecting information on forest ecosystems from aerial and satellite images, and the application of the Lidar system, as well as on further development of the Serbian forest information system.

The research of professors Milivoj Vučković and Branko Stajić is related to the quantifying of growth, development and increment of individual tree species depending on the developmental stages of trees and stands, origin, habitat quality, development of stands, health status and silvicultural –management measures. The greatest attention of these professors in research is focused on the analysis and determination of individual elements of importance for defining adequate production management goals: optimal crown size, number of trees of the future, target diameter and volume, etc. They also explore the possibility of using increment as a bioindicator of the vitality of trees and stands, which has exceptional theoretical and practical significance, especially in conditions of increasingly pronounced negative effects of climate change and the consequent impact of various harmful factors of biotic and abiotic origin. Dendrochronological-dendroclimatological research and the research of spatial elements of stand structure, initiated by Professor Branko Stajić during the first decade of this century, were pioneer research of this type in Serbian forestry. His teaching assistant Marko Kazimirović and associate Živan Janjatović help him a lot in his work both in the field of science and teaching.

These research activities receive their professional verification within a number of forestry disciplines, in particular in



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10 Forest inventory field work

11 Data processing software for forest inventory and operational forest management plans development

12 The concept of sample in the Serbian National Forest Inventory

forest management planning with which they form a logical unit. Typological differentiation of forests and forest sites was implemented into Serbian forestry by professors Dušan Jović and Milan Medarević in collaboration with colleagues from the Chair of Forest Ecology. Multifunctional forest management, functional forest zoning and definition of the protection regime were investigated and introduced to the practice of Serbian forestry by Prof. Milan Medarević. His activity in the field of planning in protected natural areas is of particular importance. Prof. Medarević with Assistant Professors Nenad Petrović and Biljana Šljukić deals with the research and implementation of the principles of close-to-nature and adaptive forest management, i.e. the role of planning in the conditions of pronounced climate change. Assistant Professor Nenad Petrović pays special attention to private forest owners - organisation of private forest owners and planning documents related to this category of forests. The cooperation of the teachers of this subject with the professional circles is exceptional, and it resulted in a large number of developed planning documents of operational character, forestry strategies and development programmes, in the drafting of various legislative acts related to forestry, and in solving numerous practical problems in Serbian forestry. Professor Milan Medarević has participated in the creation of over 20 spatial plans at the national level (SP of Serbia in 1996, SP of Serbia in 2010, SP of Serbia 2020-2035) and the local (municipal) level. He is a co-author of several strategies of national importance. During his term as the Dean of the Faculty of Forestry, Professor Medarević was the chairman of the Conference of Deans and Directors of Forestry Faculties and Schools of Europe - ConDDEFFS and in that period, he organised a ConDDEFFS Conference in Serbia, in Vrnjačka Banja in 2014. He is the winner of the October award of the City of Belgrade for his Master of Science thesis in 1983. As a visiting professor, Milan Medarević taught Forest Management at the

University of Banja Luka - Faculty of Forestry, in the period 1994 - 2016. Assistant Professor Nenad Petrović followed in his footsteps by taking over that role.

Professional and technical assistance to teachers at the Chair of Forest Management Planning is provided by Dr. Snežana Obradović (preparation of operational planning documents), Grad. Eng. Biljana Pešić (work in databases) and Jasmina Vučetić, in the part related to cartography.

Extensive scientific and professional work of the teachers of the Chair resulted in a large number of textbooks, numerous monographs and a large number of professional and scientific articles published in domestic and international journals. It is important to note that, in the period from 2007 to 2018, 45 scientific papers of the Chair members were published in SCI-indexed journals, many of which belong to categories M21 and M22.

Cooperation with other institutions

The Chair has a significant cooperation with many domestic and international institutions for which forests are the focus of interest. The Chair has excellent cooperation with forestry faculties in Banja Luka, Sarajevo, Zagreb, Ljubljana, Skopje, Tirana, Brno, and Freiburg as well as with the Faculty of Forestry of the BOKU University, the BFW Forest Research Centre from Austria and with the forestry faculties of the Russian Federation, etc. After a pause, the cooperation with forest management planning chairs of forestry faculties from the states that emerged from the disintegration of former SFRY was renewed.

In addition to educational institutions, the Chair has intensive cooperation with NFG – the Norwegian Forestry Group, ENFIN – the European network of national forest inventories, UNIQUE – the Consortium for Forestry and Land Use, FRA/FAO – Global Forest Inventory Section, IUFRO – the International Union of Forestry Research Organisations, EFI – the European Forestry Institute, etc.

Professor Damjan Pantić is the official representative of Serbia in the ENFIN network, and both PhD Teaching Assistant Dragan Borota and Prof. Pantić are FAO experts for forest inventory.

Professor Branko Stajić is a member of the Association for Tree-Ring Research.

Since 2000, Professor Milan Medarević and Assistant Professors Nenad Petrović and Biljana Šljukić (since 2018) have been FAO experts in the field of forest management planning.

Professor Milorad Janić is a member of ADN - the Autodesk Developer Network and CADUA – the CAD User Association of CAD programme users.

In Serbia, teachers and associates of the Chair are members of the Association of Forest Engineers and Technicians, Chamber of forestry engineers, Hunting Chamber, Association of Geodetic engineers and surveyors, etc. The cooperation



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of the Chair with public forest enterprises in Serbia is of particular importance. Every year a seminar on forest management planning is organised in the teaching base on Mt. Goč. In this seminar colleagues from forestry practice solve numerous, current problems of the forestry profession.

13 The traditional forest management planning seminar in the Goč teaching base

14 Assistant professors Petrović and Šljukić presenting scientific project results at a particular location

15 Continuous education of forest engineers

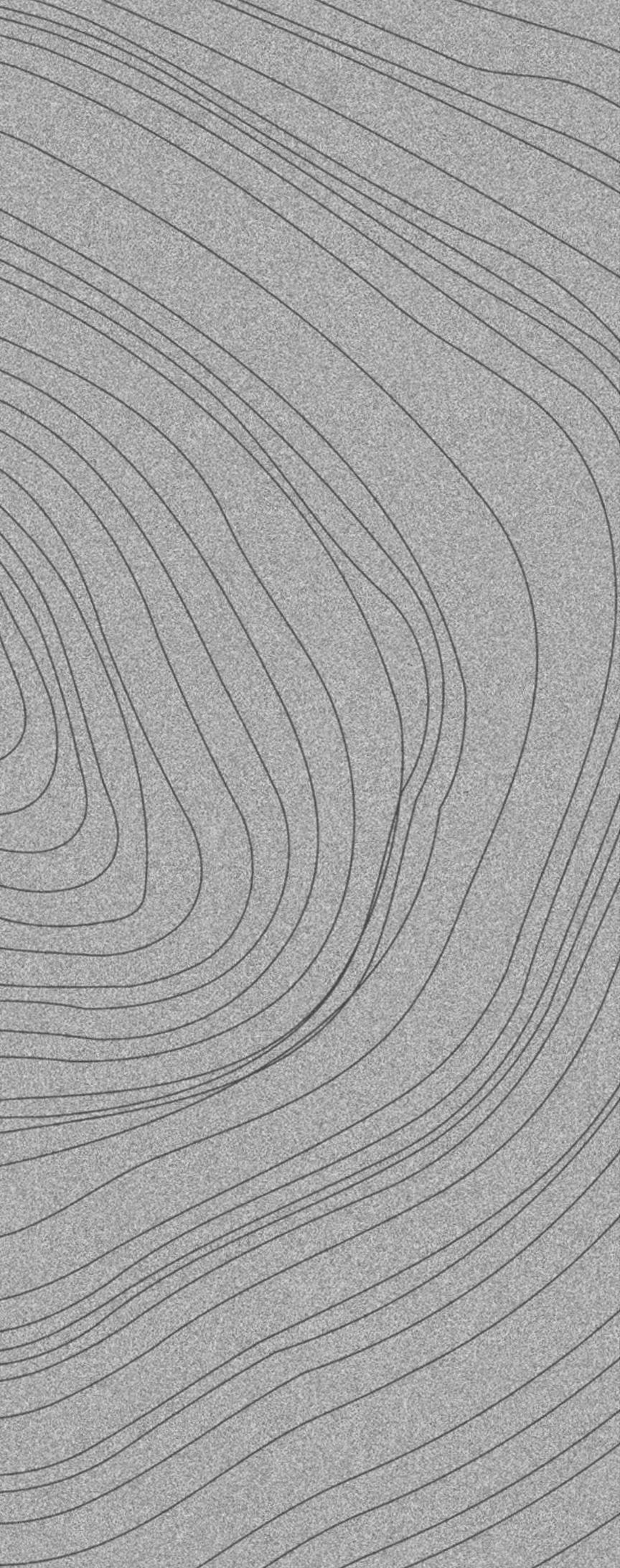
Selected projects

- “Development of climate change adaptive forest management in Germany and Serbia”, University of Freiburg, University of Belgrade (2019–2021)
- “Contribution of Sustainable Forest Management to a Low Emission and Resilient Development - GCP / SRB / 002 / GEF” (2018–2022)
- “EM + CL-2018 - Establishment of ecological networks and development of red lists in Serbia” (2018–2019)
- “Sustainable management of total forest potentials in the Republic of Serbia”, Ministry of Education, Science and Technological Development of RS (2011–2019)
- “Distributed, integrated and harmonised forest information for bioeconomy outlooks”, Horizon 2020, Project ID 633464, Call H2020-ISIB-2014-2, Proposal acronym: DI-ABOLO (2015–2018)
- “Western Balkans Academic Education Evolution and Professional’s Sustainable Training for Spatial Data Infrastructures” - BESTSDI, EU ERASMUS +
- “Improvement of higher education (EU HETIP)”, Reconstruction of the teaching base Goč, IPA Project (2012 -2015)
- “FP 6, SEE-ERA.NET: Multifunctional Management of Coppice Forests. Coppice forestry in South-Eastern Europe: Problems and future prospects” (2008–2009)
- “FOPER: Strengthening capacities of education and training for forest policy and economics development (Forest Policy and Economics Education and Research)” (2004–2008)
- “National Forest Inventory in Serbia”, Norwegian Forestry Group (2003–2008)

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CHAIR OF BIOECONOMY, POLICY AND GOVERNANCE IN NATURE CONSERVATION (BEPOS)

Text drawn up by:
Dr. Dragan Nonić, Full Professor

Brief history

In all curricula of the department of Forestry, and then the Faculty itself, there were also disciplines of organisational and economic character deployed in different organisational units.

According to the Decree of the Faculty of Agriculture of 11 February, 1921, only the subjects (10 basic and 32 professional subjects), which were taught in the Forestry Department of the Faculty of Agriculture were prescribed. The basic subjects included National Economy and Finance, and the professional ones, among others, Forestry Policy, Forest Governance and Forest Accounting, Forest Law and Legislation and History of Forestry.

According to a 1932 Decree of the Faculty of Agriculture and Forestry a total of 18 institutes were prescribed, which also included the Institute for Forest Policy and Governance with Bookkeeping, Statistics and Forest Products Trade. The subjects were divided into two groups: common for both departments (National Economics with Finance) and subjects taught in the Forestry Department (including Forest Governance with Bookkeeping, Forest Economic Policy with Legislation and Statistics, Forest Products Trade and Fundamentals of General Legislation).

By the Decree of the Government of the People's Republic of Serbia of 5 February, 1949, the Faculty of Forestry was established as an independent higher education institution. According to the curriculum, organisational and economic disciplines (Organisation and Planning of Forest Enterprises, Organisation and Planning of Forest-Industrial Enterprises and Political Economy) were at the Chair of Forest Management and Planning.

Since the establishment of the Forestry Department, and then the independent Faculty of Forestry, the teachers of organisational and economic disciplines in the first generation of teachers at The Faculty of Forestry in Belgrade were:

CHAIR STAFF:

Teaching staff

Dr. Dragan Nonić,
Full Professor, Head of Chair

Dr. Ljiljana Keča,
Full Professor

Dr. Jelena Nedeljković,
Assistant Professor
and Research Associate

Professional-technical associates

Milica Marčeta,
Master Engineer, Chair Secretary

Prof. Dr. Milan Marinović (in the period 1924–1941) and Prof. Dr. Jovo Zubović (in the period 1946–1961).

Prof. Dr. Milan Marinović (1887–1951), was born in 1887 in Trnava near Đakovo. He graduated from the study programme of forestry in Banska Stiavnica in 1910, and earned his doctoral degree in 1926 in Brno. From 1924, he was a part-time teacher at the Faculty of Agriculture and Forestry in Zemun for subjects Forest Policy, Forest Governance and Timber Trade, and from 1928 he was associate professor in the Forestry Department. In 1946, he was elected full professor at the Faculty of Economics in Zagreb, in the subject of Forest economics. He is the author of significant publications from the period before World War II: "Forest-Economic Geography" (1934) and "Fundamentals of the Science of Forest Governance", Book I – Governance Organisation" (1939).

Prof. Dr. Jovo Zubović (1891–1981) was born in 1891 in Vujinovići near Banja Luka. He graduated from the undergraduate study programme of forestry at the Vienna College of Land Culture in 1916, where he also earned his doctoral degree in 1917. Before the war he worked as head of the Forest Management Department in the forest directorates in Sarajevo, Skopje, Mostar and Banja Luka, and after World War II at the Ministry of Forestry in Sarajevo. In 1946, he was elected associate professor at the Faculty of Agriculture and Forestry



1 Prof. Dr. Dušan
Simeunović

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in Zemun for the subjects Forest-Economic Policy and Forest Assessment with Statistics, and later he also taught Forest Economics and Forest Economic Geography. In 1957, he was elected to the title of full professor at the Faculty of Forestry in Belgrade for the courses Fundamentals of Dendrometry and Forest Management. He retired in 1961.

The Chair of Forest Economics and Wood Industry was established according to the provisions of the first 1956 statute of the Faculty of Forestry. In both the Department of Forestry and the Department of Wood Industry, this Chair organised classes and research in several related economic and governance disciplines (Political Economy, Forest Economics, Fundamentals of Law and Legislation, Organisation and Business Operations in Forestry, Wood Trade, Wood Industry Economics, Labour Protection, Organisation of Production In Wood Processing Companies, Bookkeeping, Record Keeping and Industrial Statistics).

In the 1960 Statute of the Faculty of Forestry the name of the Chair was changed to the Chair of Forest Economics, which was accompanied by certain changes in the framework of the structure of teaching subjects (Economics, Forest Economics, Organisation and Business Operations in Forestry). Instead of the subjects from the Department of Wood Industry, where an independent Chair was formed, a related subject from the Department of Torrent and Erosion Control was added (Organisation and Economics of Economy in Eroded Areas).

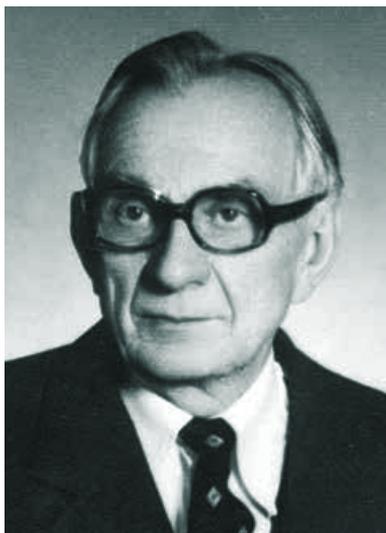
According to the 1966 Statute of the Faculty of Forestry, in addition to the courses that already existed before and with some minor changes in their names (Economics, Forest economics, Forestry Business Practice Organisation, Organisation and Economics of Production in Eroded Areas), new subjects were introduced to the Chair (Labour Science,

Timber Trade with Forest-Economic Geography and Fundamentals of Social Science).

According to the provisions of the 1973 Statute of the Faculty of Forestry, and in accordance with the socio-economic and constitutional changes, certain changes were introduced to the structure and names of the subjects at the Chair of Forest Economics (Political Economy, Forest Economics, Organisation of Governance and Business in Forestry, Watershed Management Economics, Timber Trade with Forest Economic Geography, Fundamentals of Marxism with Sociology and Socio-Economic Structure of SFRY).

Teaching in the second generation of teachers and after the establishment of the independent Chair at the Faculty of Forestry in Belgrade included the following teachers: Prof. Dr. Dušan Simeunović (in the period 1947–1978) for Forest Organisation and Business, Prof. Dr. Dušan Oreščanin (1950–1977) for Timber Trade, Prof. Dr. Branislav Šikić (1953–1956) for Economics of Forest Economy, and prof. Dr. Ljubomir Petrović (1950–1985) for Forest Economics.

Prof. Dr. Dušan Simeunović (1910–1991) was born in 1910 in Kragujevac. He graduated from the Faculty of Agriculture and Forestry in Belgrade in 1934, and from the Faculty of Law in Belgrade in 1940. He earned his doctoral degree in 1954 at the Faculty of Forestry in Belgrade. From 1947, he was employed at the Faculty of Agriculture and Forestry in Zemun, where he was elected lecturer in the subject of Forest Governance. He was elected assistant professor in 1950, in the subject Organisation and Planning of Forest Estates. He was elected associate professor in the subject Organisation and Business Practice in Forestry in 1955, and in 1960 he became a full professor. He worked in the Ministry of Forestry at positions in the field of forest governance and forest economics, and he was engaged in many professional bodies and



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2 Prof. Dr.
Dušan
Oreščanin

3 Prof. Dr.
Ljubomir
Petrović

commissions of the Chamber of Agriculture and Forestry, the Museum of Forestry and Hunting, the Forestry Association and the Association of Engineers and Technicians. He was especially active in the editorial and publishing activities of many professional journals and publications. As a UNESCO scholarship holder, he paid study visits to France, Switzerland and Italy. He retired in 1978.

Prof. Dr. Dušan Oreščanin (1920–2007) was born in Blatuša in 1920. He graduated from the Faculty of Agriculture and Forestry in Zagreb in 1933, and he earned his doctoral title at the Faculty of Forestry in Belgrade in 1957. He was elected lecturer in the subject Forest Utilisation at the Faculty of Forestry in Belgrade in 1950, and became an associate professor in the subject of Timber Trade in 1957, and a full professor in 1962. He also taught Wood Industry Economics. Among other things, he was a chief in the Ministry of Forestry and Assistant Minister in the General Wood Industry Directorate, as well as the CEO of the Rudnik Forest Export Company from Belgrade. As an associate and expert of FAO, he participated in many projects and studies in developing countries, and was also a long-term representative of the country in the UN Wood Committee in Geneva. He retired in 1977.

Prof. Dr. Ljubomir Petrović (1920–2000) was born in 1920 in Dobrnja near Petrovac on the Mlava. He graduated from the Faculty of Forestry in Belgrade in 1949, where he defended his doctoral dissertation in 1956. He was employed by the Faculty of Forestry in Belgrade immediately after graduation as the teacher of the subject Forest Transportation Facilities. In 1950, he was elected teaching assistant, and in 1957 to the title of assistant professor. He was elected assistant professor for the subject Forest Economics in 1962, associate professor in 1967, and to the title of full professor in 1973. He was awarded the Commemorative Medal of the Partisans of 1941 and he

became Vice-President of the Yugoslav-Norwegian Friendship Association. He was also the secretary general of SIT Yugoslavia, a member of the Executive Board of the University Assembly and the Assembly of the Republic Community of Education. He was also very active in the editorial and publishing activities of professional magazines and publications. He attended study trainings in Italy, Czechoslovakia, the Soviet Union, and Norway. He retired in 1985.

In accordance with the provisions of the 1978 Statute of the BUOL Institute of Forestry there was also a change in the name of the chair to the **Chair of Socio-Economic Subjects**, and certain changes were made to the names of the subjects (Political Economy, Forest Economics, Organisation and Business Practice in Forestry, Timber Trade with Forest-Economic Geography and Fundamentals of Marxism, Theory and Practice of Self-Government). It can be noticed in the structure of subjects that they represented a complete unit of socio-economic and organisational character and that, above all, they referred to the forest sector, which was predominant in the years to come.

According to the provisions of the 1983 Statute of the BUOL Institute of Forestry the name of the chair was changed to the **Chair of Forest Economics and Organisation**, while the subjects remained the same as in the previous curriculum.

In accordance with the provisions of the 1988 Statute of the Faculty of Forestry the Chair was integrated with the **Chair of Forest Management Planning**, and together they created the Chair of Forest Management Planning and Organisation, which existed until 2002 (including the provisions of the 1990, 1994 and 1998 Statutes). In terms of teaching the Chair included the following organisational and economic disciplines: Organisation and Business Practice in Forestry,



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Forest Economics and Timber Trade with Forest-Economic Geography. The socio-economic subjects (Political Economy, Sociology and Self-Government) belonged to the Chair of general subjects.

In the period of significant socio-economic changes and integration with the Chair of Forest Management Planning teaching by the third generation of teachers at the Faculty of Forestry in Belgrade was performed by: Prof. Dr. Milan Šašić in Forestry Business Practice and Organisation (in the period 1980–2002), Prof. Dr. Nenad Ranković in Forest Economics and Timber Trade (1980–2018), Prof. Dr. Živko Marković (1979–1998), prof. Dr. Vesna Rakočević (1979–1996) and prof. Dr. Andon Kostadinović (1997–2007) in Sociology and Political Economy.

Prof. Dr. Milan Šašić (1937–2005) was born in 1937 in Bje-laj near Bosanski Petrovac. He graduated from the Faculty of Forestry in Belgrade in 1960, where he defended his Master of Science thesis in 1975 and his doctoral dissertation in 1979. He started work at the Faculty of Forestry in 1980, when he was elected assistant professor. He was elected associate professor in 1985, and full professor in 1993 in the subjects of Forestry Business Practice and Organisation and Timber Trade with Forest- Economic Geography. He was the director of the representative office of the Šipad company in Belgrade and Budapest, as well as an assistant for forestry to the Federal Secretary of Agriculture in the Government of Ante Marković (1989–1992). He retired in 2002.

Prof. Dr. Živko Marković (1933–) was born in 1933 in the village of Rađevo near Valjevo. He graduated from the Faculty of Philosophy in Belgrade in 1957. He defended his Master of Science thesis at the Faculty of Political Science in Belgrade in 1964, and his doctoral dissertation in 1968. In 1979, he was employed at the Faculty of Forestry, where he was



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4 Prof. Dr.
Milan
Šašić

5 Prof. Dr.
Živko
Marković

elected to the title of associate professor and to the title of full professor in 1985. He taught Sociology and Political Economy. He retired in 1998.

So far, the following teachers have taken the **Head of Chair** position: Prof. Dr. Dušan Simeunović, Prof. Dr. Ljubomir Petrović, Prof. Dr. Milan Šašić, Prof. Dr. Nenad Ranković and Prof. Dr. Dragan Nonić.

The deans of the Faculty of Forestry in Belgrade were: Prof. Dr. Dušan Simeunović (in the period 1957–1958) and Prof. Dr. Ljubomir Petrović (two terms, 1969–1971 and 1971–1973), and both were previously vice-deans.

According to the 2002 Statute of the Faculty of Forestry **the Chair of Forest Economics and Organisation** once again became independent, with the following socio-economic subjects: Fundamentals of Economics and Sociology (which have existed as two separate subjects since 2008, Fundamentals of Economics and Sociology) and economic-organisational subjects: Organisation and Business Practice in Forestry, Forest Economics and Timber Trade and Forest-Economic Geography (since 2008, they are two separate courses, Trade in Forest Products and Forest-Economic Geography, whose name was changed to Economic Geography of Forest Resources in 2012). In 2008, a new elective course - Forest Policy and Legislation was introduced, and since 2012 two more elective subjects have been added to undergraduate studies: Entrepreneurship and Small and Medium-Sized Enterprises in Forestry and Forest Products Marketing. In addition to undergraduate studies, teaching at the Chair is organised in master's degree (since 2006) and doctoral academic studies (since 2007).

The teachers of the fourth generation of the Chair at the University of Belgrade - Faculty of Forestry are: in the field of Organisation and Business Practice in Forestry and Entrepreneurship in forestry Prof. Dr. Dragan Nonić (employee of



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6 Prof. Dr.
Nenad Ranković

the Faculty of Forestry since 1989) and Dr. Jelena Nedeljković, Assistant Professor (employed at the Faculty of Forestry since 2011). For Forest Economics, Timber Trade and Forest Policy, the teacher is Dr. Ljiljana Keča, Associate Professor (employed at the Faculty of Forestry since 2004), Dr. Sreten Jelić, Associate Professor of the Faculty of Agriculture in Belgrade (engaged at the Faculty of Forestry since 2008) who is in charge of Sociology and Fundamentals of Economics.

In 2014, the Innovative Centre for Forest Economics, Trade and Marketing (CETM) was founded within the Chair, with Prof. Dr. Ljiljana Keča as the Head of Centre.

According to the 2019 Statute of the Faculty of Forestry, the name of the Chair was changed to the Chair of Bioeconomy, Policy and Governance in Forestry and Nature Conservation (BEPOS). Bearing in mind the dynamics of development of scientific disciplines and new directions of research, there have been significant changes in the structure and names of the Chair courses, which were innovated and enriched with new contents at all study levels in preparation for the next accreditation cycle.

Scientific research and professional activity

A total of 57 scientific research dissertations and theses were defended in the narrow scientific field of Forest Economics and Organisation: 25 doctoral dissertations (23 since the establishment of the Chair), 15 Master of Science theses, 12 Master's theses and 5 International Master's theses, as well as numerous graduation and final papers.

Doctoral dissertations have been defended in the following fields: Organisation and business practice in forestry (7 doctoral dissertations), Forest organisation and economics (6), Forest economics (6), Timber trade (2), History of forestry (4). Mentors of doctoral dissertations defended at the Chair were: Prof. Dr. Jovo Zubović (1 doctoral dissertation), Prof. Dr. Dušan Simeunović (8), Prof. Dr. Dušan Oreščanin (2), Prof. Dr. Ljubomir Petrović (6), Prof. Dr. Milan Šašić (1), Prof. Dr. Nenad Ranković (1), Prof. Dr. Dragan Nonić (4).

Master of Science theses have been defended in the following fields: Organisation and business practice in forestry (7 Master of Science theses), Forest economics (3), Timber trade (4), and Sociodemographic research (1). The mentors of the Master of Science theses defended at the Chair were: Prof. Dr. Dušan Simeunović (3 Master of Science theses), Prof. Dr. Dušan Oreščanin (2), Prof. Dr. Ljubomir Petrović (3), Prof. Dr. Milan Šašić (5), Prof. Dr. Nenad Ranković (1), Prof. Dr. Ljiljana Keča (1).

Master's theses have been defended in the following fields: Organisation and business practice in forestry (4 Master's degree papers), Forest economics (4) and Timber trade (4). The mentors of master's theses defended at the Chair were: Prof. Dr. Nenad Ranković (2), Prof. Dr. Dragan Nonić (3), Prof. Dr. Ljiljana Keča (6) and Dr. Jelena Nedeljković (1).

International master's theses have been defended in the following fields: Organisation of forest enterprises (1 International Master's thesis), Forest entrepreneurship (1), Management of protected areas (2) and Political aspects of the use of

renewable energy sources (1). Prof. Dr. Dragan Nonić was the co-mentor of the Master's theses in the narrow scientific field.

Scientific research at the Chair is developing in several directions: forest economics and bioeconomy, market research and marketing, policy, legislation, organisation and management in forestry and nature protection, entrepreneurship and innovations in forestry, natural resources management, sustainable development, climate change management and socio-economic research in forestry and the environment.

Members of the Chair are authors of a large number of scientific papers published in relevant international scientific and professional journals, and are also engaged as members of editorial boards and reviewers. In addition, they are co-authors and editors of several important international scientific and professional publications (monographs, encyclopedias, etc.).



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A number of textbooks are available relevant to the subjects taught at different study levels:

Coursebooks

- Ranković N. (1996): Forest Economy, Faculty of Forestry, University of Belgrade, Belgrade (361)
- Ranković N., Keča Lj. (2007): Forest Policy of Serbia, Faculty of Forestry, University of Belgrade, Belgrade (480)
- Ranković N., Keča Lj. (2011): Forest product trade and marketing, Faculty of Forestry, University of Belgrade, Planeta Print, Belgrade (564)
- Nonić D. (2015): Management and business in forestry, electronic source, Faculty of Forestry, University of Belgrade, Belgrade (398)

Supplemental coursebooks

- Nonić D. (2010): Management and business in forestry, electronic practice book, Faculty of Forestry, University of Belgrade, Belgrade (111)
- Keča Lj. (2014): Forest Economy, practice book with theoretical summaries and practical problems with solutions, University of Belgrade, Faculty of Forestry, Planeta Print, Belgrade (142)



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Coursebook translations

- Oesten G., Roeder A. (2001): Management of Forest Estates in Central Europe, electronic source, Institut für Forstökonomie der Universität Freiburg, Freiburg. (364)
- Schmithüsen F., Kaiser B., Schmidhauser A., Mellinghoff S., Kammerhofer A. W. (2006): Entrepreneurship and Management in Forestry and Wood Processing, Publishing Centre of the Faculty of Economics in Belgrade, Belgrade (529).

Together with his associates, Prof. Dr. Dragan Nonić has organised three important international conferences at the Faculty of Forestry and the Rectorate of the University of Belgrade:

- Privatisation in Forestry, Belgrade, 2002 (in collaboration with the Alexander von Humboldt Foundation and the University of Freiburg, Germany).
- Legal Aspects of European Forest Sustainable Development, Zlatibor, 2005 (in collaboration with IUFRO and ETH University of Zurich, Switzerland).
- Sustainable Development and Climate Change: Connecting Research, Education, Policy and Practice, Belgrade, 2018 (in collaboration with the Alexander von Humboldt Foundation from Germany, Humboldt Club of Serbia and the University of Belgrade)

7 Doctor of science
conferment ceremony –
Rectorate, Belgrade (2016)

8 Doctoral dissertation
defense – Faculty of
Forestry 2018

Cooperation with other institutions

The Chair has developed national, regional, and international cooperation with numerous scientific, economic, and professional institutions and organisations.

Activities that promote this cooperation include teaching and participating in commissions at different levels of study, as well as joint research, research projects and scientific papers, scientific and professional training, etc. with relevant institutes and faculty departments abroad: BOKU Institute of Forest, Environmental and Natural Resource Policy (Austria), Faculty of Environment and Natural Resources, Albert-Ludwigs University of Freiburg, (Germany), Faculty of Forestry, University of Poznań, (Poland).

Intensive cooperation has been developed with the faculties in the region of Southeast Europe: Stefan cel Mare University – Faculty of Forestry (Romania), University of Ljubljana – Biotechnical Faculty (Slovenia), University of Zagreb – Faculty of Forestry (Croatia), University of Sarajevo – Faculty of Forestry (Bosnia and Herzegovina), University of Banja Luka – Faculty of Forestry (Bosnia and Herzegovina), Ss. Cyril and Methodius University in Skopje – Faculty of Forestry (Macedonia), and faculties of the University of Belgrade: Faculty of Organisational Science, Faculty of Economics, Faculty of Agriculture, and Faculty of Philosophy, as well as the Institute of Forestry in Belgrade.

Teachers and associates of the Chair have participated in Tempus, EFI-FOPER I & II, COST, ERASMUS+ and other international projects.

They are also active members of the International Union of Forest Research Organisations (IUFRO), the European Cooperation in Science and Technology (COST), and the European Forestry Institute (EFI).

They have also collaborated successfully with the German Alexander von Humboldt Foundation (Prof. Dr. Dragan Nonić



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and Dr. Jelena Nedeljković are Alumni scholars) in the organisation of conferences, as well as with the DAAD foundation (Prof. Dr. Dragan Nonić is an Alumni scholar) in the organisation of regional projects and seminars.

Implementation of various project and teaching activities has initiated cooperation of the Chair with the Ministry of Agriculture, Forestry, and Water Management – Forest Directorate and SE “Srbijašume”.

9 Cooperation with ETH
– Prof. Franz Schmithüsen
(2004)

10 IUFRO Conference
– Excursion, Tara (2005)



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11 Erasmus – Faculty of Forestry in Poznan, Poland (2019)

12 Erasmus students – PE “Srbijašume”, Belgrade (2019)

13 IUFRO Symposium – Kaunas, Lithuania (2012)

14 IUFRO Symposium – Vienna, Austria (2015)

15 International Day of Forests – PE “Srbijašume”, Belgrade (2019)

Selected projects

National projects and studies

- “Organisation and activity of the forest advisory service in Serbia: a programme of measures to improve the professional and advisory service in privately-owned forests”, Ministry of Agriculture and Environmental Protection – Forest Directorate (2015–2016)
- “Research into the types of private forest owners in Serbia with the aim to develop a system of support measures for the private forest sector”, Ministry of Agriculture, Trade, Forestry, and Water Management – Forest Directorate (2012–2013)
- “Value chains of non-wood forest products and their role in the development of the forest sector of Serbia”, Ministry of Agriculture, Forestry, and Agriculture (2012–2013)
- “Exploring the potential for the commercialisation and marketing of non-wood forest products and their role in the development of the forest sector in AP Vojvodina”, Provincial Secretariat for Agriculture, Water Management, and Forestry (2012–2013)
- “Research of the development of entrepreneurship in the private forest sector in Serbia: Small and medium enterprises for the purchase, processing, and placement of non-wood forest products”, Ministry of Agriculture, Trade, Forestry and Water Management – Forest Directorate (2011–2012)
- “Development of small and medium enterprises in Timok forest area: system of support measures and organisation model”, Ministry of Agriculture, Forestry, and Water Management – Forest Directorate (2009–2010)

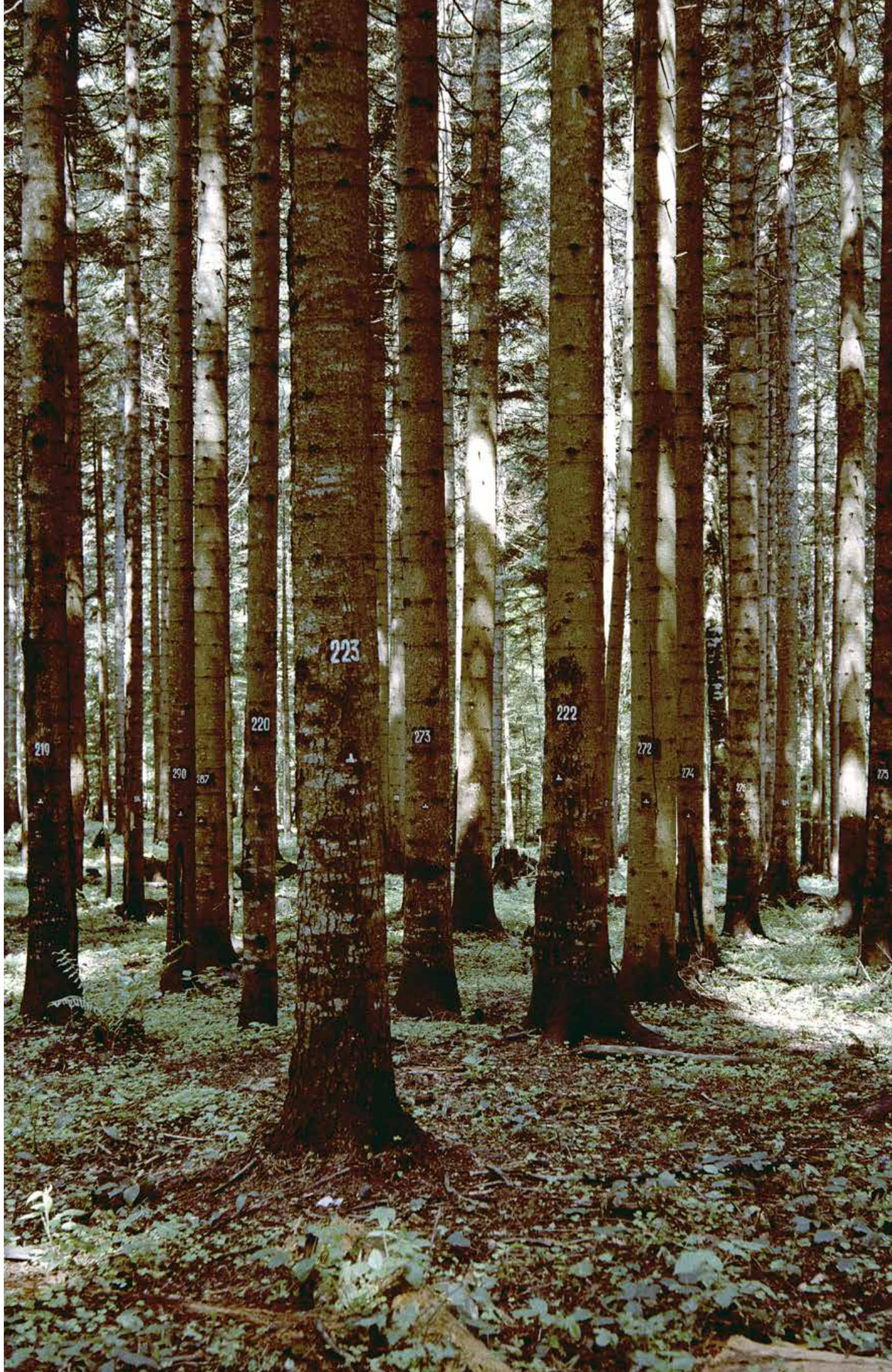
International projects

- “Forest Land Ownership Changes in Europe: Significance for Management and Policy – FACESMAP”, COST Action FP1201 (2012–2016)
- “Research into the organisation of private forest owners in the Western Balkan region – PRIFORT” (EFI project 5044), Austrian Ministry of Agriculture and Forestry, Environment, and Water Management & European Forest Institute, Finland (2007–2009)
- “Curriculum Development in Forestry Sciences”, EU-TEMPUS CD_JEP-16071-2001, Belgrade, Tirana, Sarajevo, Padua, Aberdeen, and Freiburg (2002–2004)
- “Forest Sciences Education and Research Network South East Europe – FORNET”, DAAD Foundation, Freiburg, Belgrade, Sarajevo, Sopron, Tirana, Zagreb (2001–2003)

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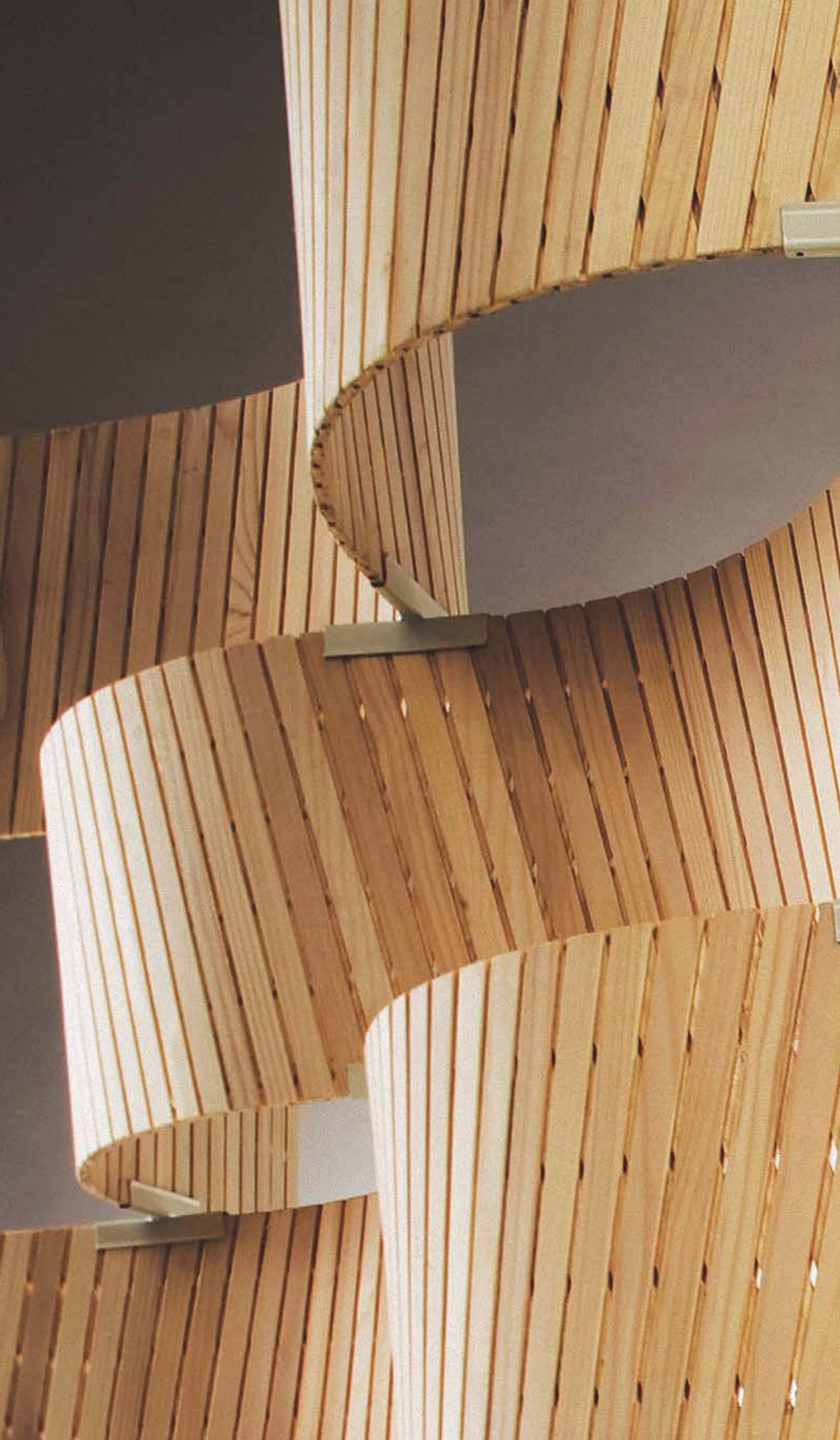
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DEPARTMENT OF WOOD SCIENCE AND TECHNOLOGY

Text drawn up by:
Dr. Nebojša Todorović, Associate Professor

About the Department

On 10 September 1956, following the initiative of Prof. Dr. Milutin Knežević, Dean of the Faculty of Forestry, and Prof. Dr. Dušan Oreščanin, Assistant Minister of Economy of the Socialist Republic of Serbia in the field of the wood industry, the Council of the Faculty of Forestry passed the first Statute of the Faculty of Forestry, University of Belgrade and formed two departments: Forestry Department and Wood Industry Department. By decision no. NS-no. 107 of October 12, 1956, the Assembly of the Socialist Republic of Serbia adopted the Statute of the Faculty of Forestry. On that occasion, the Wood Industry Department (forerunner of today's Department of Wood Science and Technology) was officially established. The first generation of students who enrolled in the Wood Industry Department in 1956/57 had 28 students.

The first-generation students who enrolled in the Faculty in 1956/57 were Aleksić Živomir, Adamović Dragiša, Bauc Endre, Vaštaković Uglješa, Vukašinović Sredoje, Vuksanović Miladin, Golubović Ilija, Dimitrijević Milivoje, Dimitrijević Radmila, Dimitrov Tomislav, Dunić Dragijana, Đorđević Sreten, Janković Slavko, Keleuva Milan, Kijametović Žarko, Krstić Slavoljub, Marinčević Miloš, Medaković Bojana, Medić Milorad, Negovanović Lazar, Pantelić Velimir, Popin Radoslav, Stojanović Živorad, Čatic Petar, Urošević Bosiljka, Filip Jan, Hočevan Marjan, and Čović Branimir.

The first student to graduate in the late 1960s was Tomislav Dimitrov, Grad. Eng.

From its establishment until 30 September 2019, a total of 2,029 students graduated from the Department (1,869 before the Bologna system of education and 160 according to "Bologna"). They gave a significant contribution to the development of the wood technology profession. Besides graduate engineers, 76 doctors of sciences, 76 masters of sciences, 10 specialists, 63 master engineers, and 15 vocational engineers were educated at the Department in the same timeframe. A hundred-year-long practice of teaching at the Faculty of Forestry resulted in a total of 74 coursebooks, 49 course packets, 44 practice books and workbooks, and six monographs. Scientific research and professional work in this field also produced impressive results. More than 5000 scientific and professional papers were published, and several hundreds of projects were conducted for the needs of the profession. These achievements undoubtedly show the scientific and professional potential of this Department.

The curriculum and the curriculum-related course syllabuses of the Department of Wood Science and Technology have been changing in the past 63 years to meet the



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professional requirements, follow the trends in scientific research, and comply with the regulations in the field of higher education. In that sense, there were five levels of study with appropriate curricula and syllabuses at the Department in 2019. They were: undergraduate academic studies, master's degree academic studies, doctoral studies, specialist studies, and vocational studies. All the curricula were accredited by the Commission for Accreditation and Quality Assurance of the Republic of Serbia. The teaching process at the Department of Wood Science and Technology has been performed following the 4 + 1 + 3 format, i.e. four-year undergraduate studies + one-year master's degree studies + three-year doctoral studies. The Department of Wood Science and Technology also offers three-year-long vocational studies and one-year-long specialist studies. This model is in line with the principles of the Bologna Declaration and the Law on Higher Education of the Republic of Serbia.

Over the sixty years of its existence, the teaching process at the Department has been conducted by 104 members of the teaching staff. In early September 2019, there were 24 teachers and four associates at the Department, six of whom were full professors, seven associate professors, eleven assistant professors, and four teaching assistants. Above all, we are proud of the works of our students mentored by Prof. Jelena Matic that have been awarded at domestic and international fairs in the past few years. Our department also has the Centre for Innovation and Education that deals with innovations in the wood industry and new product development in the field of furniture production. There are also one institute, 14 laboratories, and nine centres at the Department established to meet the needs of scientific research and professional activity of different scientific disciplines studied at the Department. The teaching and professional staff are divided into smaller organizational units or chairs. In 2019, the organisational structure of the Department included the following chairs: Chair of Primary Wood Processing, Chair of Machines and Apparatuses in Wood Processing, Chair of Chemical and Mechanical Wood Processing, Chair of Final Wood Processing, Chair of Wood Industry Management and Economics, and Chair of Wood Protection.



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1,2 Teachers, teaching assistants, associates, and laboratory technicians of the Department – in the past and now

3 First-generation students, 60 years later, Belgrade, 2016



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4 Design projects of students of the Department of Wood Science and Technology showcased at national and international exhibitions

5 MUSE, student project awarded the Golden Key at Belgrade Furniture Fair 2017 (designed by Petar Blagojević, and mentored by prof. Jelena Matić)

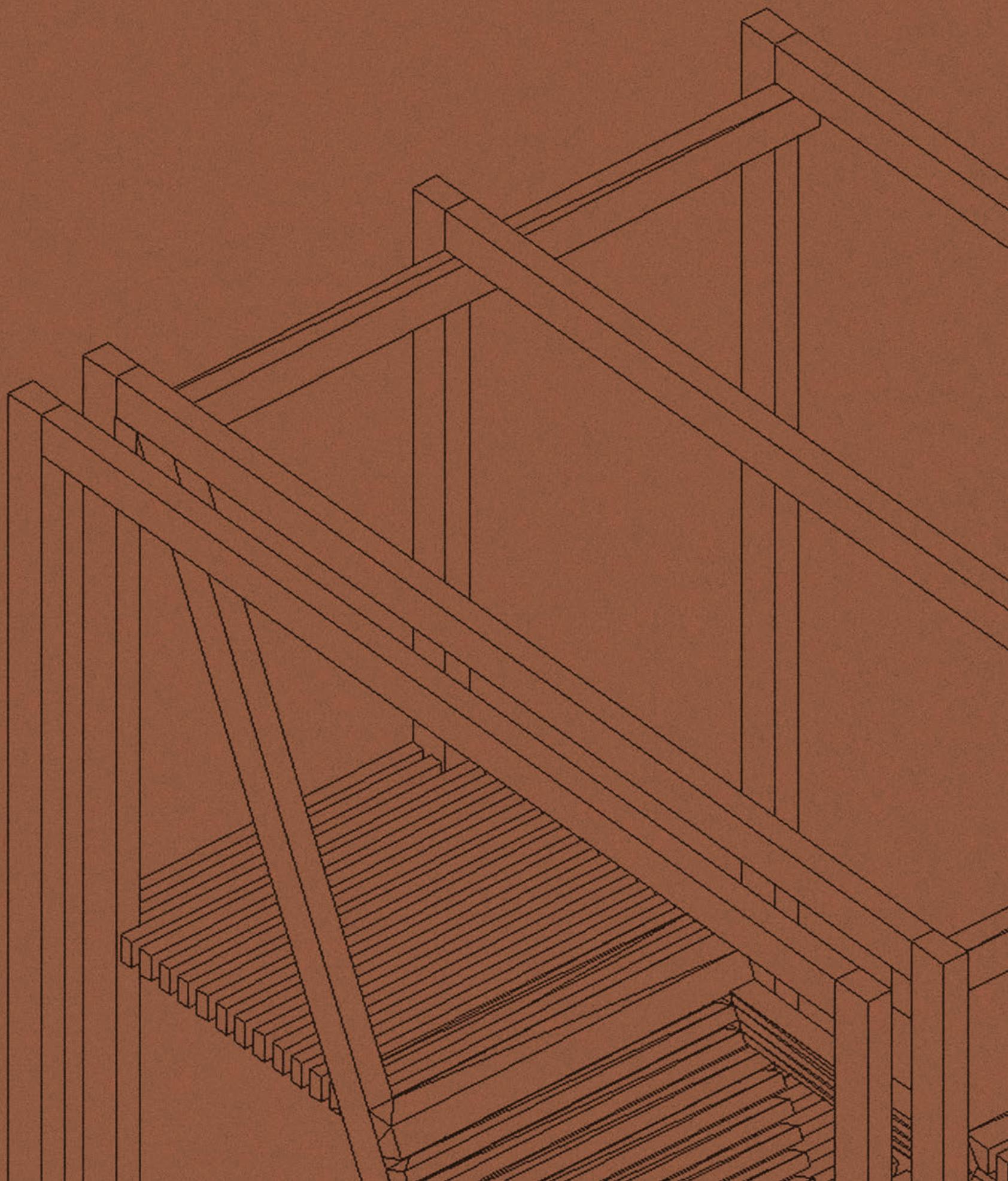
6 The Centre for Innovation and Education of the Department of Wood Science and Technology

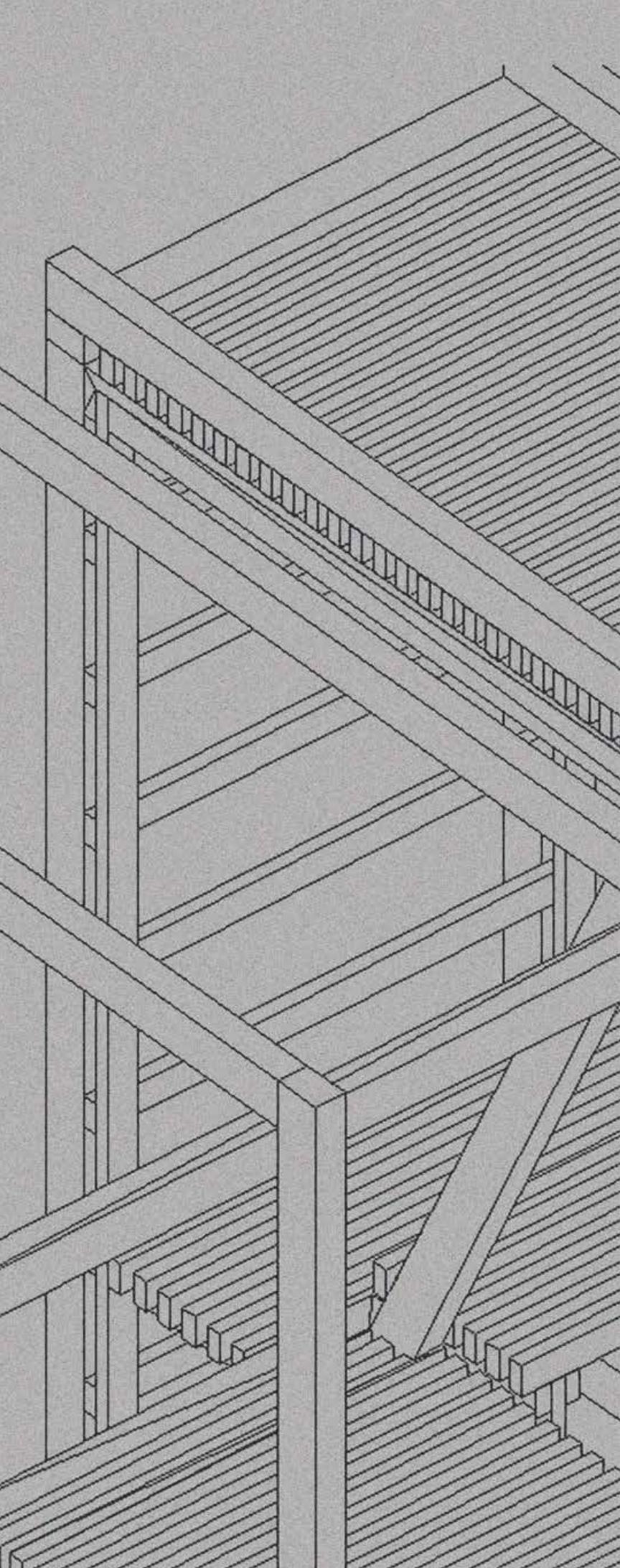
7 Bending strength testing in the Wood Testing Laboratory at the Department of Wood Science and Technology

Faculty deans of the Department

The following members of this Department served as deans of the Faculty of Forestry:

- 1956 – 1957 and 1966 – 1967 Dr. Milutin Knežević
- 1979 – 1981 Dr. Radomir Senić
- 1987 – 1989 Dr. Mihailo Petrović
- 2000 – 2003 Dr. Milan Nešić





CHAIR OF PRIMARY WOOD PROCESSING

Text drawn up by:
Dr. Vladislav Zdravković, Associate Professor

Brief history

Primary wood processing became a distinct scientific discipline in the 1930s. In line with the Law on Universities of 1930, the Faculty of Agriculture and Forestry in Belgrade passed a decree that introduced Mechanical Wood Processing and Chemical Wood Technology into the curriculum of the Department of Forestry in 1932.

As an independent higher-education institution, the Faculty of Forestry was founded on 5 February 1949 at the initiative of Prof. Dr. Milutin Knežević, Dean of the Faculty of Forestry, and Prof. Dr. Dušan Oreščanin, Assistant Minister of Economy of the Socialist Republic of Serbia in the field of the wood industry. On 10 September 1956, the Council of the Faculty of Forestry passed the Statute of the Faculty of Forestry, University of Belgrade and established two departments: Department of Forestry and Department of Wood Industry.

The first curriculum of the Department of Wood Industry in the SFRY introduced Primary Wood Processing as a separate course. The 1958 curriculum abolished Mechanical Wood Processing at the Department of Forestry and introduced Primary Mechanical Wood Processing at the Department of Mechanical Wood Processing. According to the 1973 curriculum, Basics of Wood Processing was still a course taught at the Department of Forestry, while the Department of Wood Processing divided Primary Mechanical Wood Processing into two courses: Wood Turning with 2 + 2 classes per term and Veneer and Veneer Plywood with the same number of classes.

According to the 1988 curriculum, Wood Turning changed its name into Wood Processing in Sawmills with the same number of classes and the same curriculum status.

Prof. Dr. Milutin Knežević belonged to the first generation of teachers at the Chair of Primary Wood Processing. Although Prof. Dr. Milutin Knežević was a forestry engineer, he laid the

CHAIR STAFF:

Teaching staff

Dr. Vladislav Zdravković,
Associate Professor,
Head of Chair

Dr. Zdravko Popović,
Full Professor

Dr. Goran Milić,
Associate Professor

Dr. Nebojša Todorović,
Associate Professor

Dr. Ranko Popadić,
Associate Professor

Dr. Aleksandar Lovrić,
Assistant Professor

MEng Marko Veizović,
Teaching Assistant

Professional associates and laboratory technicians

Grad.Eng. Bojana Stanković,
Higher Education Associate

Eng. Predrag Stanković,
Laboratory Technician

Goran Cvijetićanin,
Laboratory Technician



1 Current members of the Chair of Primary Wood Processing

1

foundations of wood processing at the Faculty of Forestry. He was one of the founders of the Department of Wood Industry and the first head of the Chair of Primary Wood Processing.

He successfully taught Wood Turning, Wood Technology, Veneer and Veneer Plywood, and Woodworking Machines. Prof. Dr. Milutin Knežević was the first doctor of science in the field of wood processing. He also wrote the first coursebook published at the Chair – Wood Turning that replaced the previously-used authorised course packet.

The second generation of teachers at the Chair included Prof. Dr. Nadežda Lukić-Simonović, who was the next head of the Chair and did research into properties of wood, Prof. Dr. Momir Nikolić, teacher of Wood Turning, and Prof. Dr. Mihailo Nikolić, teacher of Veneer and Veneer Plywood. The latter two teachers also taught Woodworking Machines and Tools at one time. Prof. Dr. Momir Nikolić was the first to use electronic computers in the mathematical processing of a large amount of data in the preparation of his doctoral dissertation at the Institute of Wood Processing in the early 1970s. He led numerous technological projects and several scientific projects. Prof. Dr. Mihajlo Nikolić was one of the first doctors of science in the field of veneers and plywood in the former SFRY and a mentor or member of the doctoral thesis committees of many candidates who were later affirmed as acknowledged experts in this field. The Chair of Primary Wood Processing also had a course in Wood Anatomy taught by MSc Darinka Sisojević. During this period, teaching courses and disciplines crucial for the development of the Chair was assisted by Prof. Dr. Svetislav Vasiljević, Prof. Dr. Jovan Pavić, and Prof. Dr. Mihailo Petrović.

The third generation of teachers at the Chair included Prof. Dr. Borislav Šoškić, Head of the Chair of Primary Wood Processing for a long time, Prof. Dr. Branko Kolin, also Head of the Chair for a long time, and Dr. Luka Glavaški, Assistant

Professor. The fourth generation of teachers included Prof. Dr. Zdravko Popović, Vice-Dean for finance of the Faculty of Forestry in four mandates, and Dr. Vladislav Zdravković, Associate Professor and current Head of the Chair of Primary Wood Processing.

The fifth generation of teachers, competent enough to support and enhance the development of the Chair in the future period, consists of Dr. Goran Milić, Associate Professor, Dr. Ranko Popadić, Associate Professor, Dr. Nebojša Todorović, Associate Professor and the current Head of the Department of Wood Science and Technology, and Dr. Aleksandar Lovrić, Assistant Professor. A valuable contribution to the teaching process in this period has been provided by Prof. Dr. Dragica Vilotić teaching the course in Wood Anatomy. Since members of the Chair of Primary Wood Processing always think of its future generations, the team currently includes MEng Marko Veizović, Teaching Assistant. Laboratory technicians and higher education associates are indispensable members of the Chair of Primary Wood Processing. Currently, Eng. Predrag Stanković, Laboratory Technician, Grad. Eng. Bojana Stanković, Higher Education Associate, and Goran Cvijetićanin, Laboratory Technician facilitate the smooth functioning of the Chair.

The Chair of Primary Wood Processing is in professional charge of several facilities at the teaching base of the Faculty of Forestry on Mt. Goč near Kraljevo, where members of the Chair provide professional support for the operation of the sawmill, modern sawn timber kilns, boiler room, and steamer.

These facilities are also used for the practical training of undergraduate students in the courses that belong to the Chair of Primary Wood Processing.

The Chair of Primary Wood Processing has the following laboratories at its disposal: Laboratory for Wood Anatomy, Wood Testing Laboratory, Laboratory for Hydrothermal Wood



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Processing, Laboratory for Sawmill Wood Processing, and Laboratory for Veneers and Plywood. Without these labs, their equipment and staff, scientific research work and cooperation with the economy would not be possible.

Teachers of the Chair of Primary Wood Processing have published a large number of coursebooks since 1961, when the first coursebook *Wood Turning* written by prof. Milutin Knežević was published. They have also published workbooks and practice books, as well as special editions in the form of scientific monographs, such as *Properties and Functional Processing of Beech Wood* and *Theory and Practice of Veneer Peeling*.



4

2 Practical classes at the teaching base on Mt. Goč

3 Practical classes in Wood Seasoning at the teaching base on Mt. Goč

4 Automatic equipment for testing strength properties of wood and wood-based products (WT5UT)

5 Nigos Automatic Laboratory Dryer
B – Automatic Air Conditioning Chamber



5

Scientific research and professional activity

Prof. Dr. Milutin Knežević, one of the founders of the Wood Industry Department and the first head of the Chair of Primary Wood Processing was also the first doctor of science in the field of wood processing. As a doctoral student at the University of Zagreb, he brought ideas, concepts, and literature of the respected authorities in this field at the time, such as Dr. Aleksandar Ugrenović, Academician Professor, Prof. Dr. Ivo Horvat, and Prof. Dr. Juraj Krpan. His scientific work laid the foundations for the development of profile courses at the Chair of Primary Wood Processing, such as Wood Science, Wood Drying and Steaming, Wood Processing in Sawmills, and Veneers and Veneer Plywood. Thanks to Dr. Milutin Knežević, his associates and successors Prof. Dr. Nadežda Lukić-Simonović, Prof. Dr. Borislav Šoškić, Prof. Dr. Mihailo Nikolić, Prof. Dr. Momir Nikolić, MSc Darinka Sisojević, Prof. Dr. Branko Kolin and in the next generation Prof. Dr. Zdravko Popović and Prof. Dr. Vladislav Zdravković had a firm foundation to build on.

Besides teaching and working with students, members of the Chair of Primary Wood Processing have worked in close cooperation with the economy. Prof. Dr. Borislav Šoškić, first as an associate of Prof. Dr. Božidar Perović and later independently, led numerous conceptual, investment, and main designs throughout the state at the time. He was one of the authors of the main design of the "Vrbas" Furniture Factory in Banja Luka and "ŠIK Kopaonik" Veneer Plywood Factory in Kuršumlija. He also designed projects in Montenegro, as well as expert projects, both for large wood mills, which were the main concept of the economy at the time, and for small enterprises in the subsequent period. Members of the Chair of Primary Wood Processing have also cooperated with "Slobodan Jović" Forest Industrial Plant in Kučevo, numerous sawmill and veneer plant facilities, and designed the first production plant of solid hardwood panels in Serbia.

Prof. Dr. Zdravko Popović is one of the founders of the Agency for Wood and Wood Industry Cluster. Two members of the Chair, Prof. Dr. Branko Kolin and Prof. Dr. Zdravko Popović have been members of the editorial board of the only national professional journal *Wood Processing*.

Today, our chair staff members cooperate with many institutions at home and abroad. They are members of the commissions at the Institute for Standardisation of Serbia, participate in the work of the Centre for Technology Transfer of the University of Belgrade, and cooperate with universities in Slovenia, Croatia, Hungary, Germany, Austria, Romania, Bulgaria, Switzerland, Turkey, Northern Macedonia, and Bosnia and Herzegovina.

A total of 13 Master of Science theses, 12 doctoral dissertations, as well as a number of master's theses and graduation papers have been published at the Chair of Primary Wood Processing.

Members of the Chair of Primary Wood Processing have been active members in the committees for the defense of Master of Science theses and doctoral dissertations at other chairs of the Faculty of Forestry and other universities.

Within the scientific research, members of the Chair of Primary Wood Processing have published a significant number of scientific papers in high-ranked journals and presented a large number of scientific papers at national and international conferences.

At present, the Chair has six teachers who are actively and responsibly engaged both in teaching and scientific research and successfully cooperate with wood processing companies. All teachers at the Chair of Primary Wood Processing have Master of Science and doctoral degrees in the scientific field that they deal with. They are willing to preserve this honourable tradition, but they are also ready to follow present-day trends and adopt state-of-the-art technologies.

Cooperation with other institutions

In the period from 2013 to 2019, the Chair of Primary Wood Processing of the Department of Wood Science and Technology of the Faculty of Forestry was the holder of the “Innovation School Sprungbrett” project together with six other higher education institutions from Switzerland, Russia, Slovenia, B&H, and Macedonia. The project was led by the Department of Architecture, Wood, and Civil Engineering of the University of Bern – Switzerland and had two three-year periods. The project offered final-year undergraduate and master’s degree students a platform to perform practical training in the wood industry companies across Europe. The project was led by Dr. Nebojša Todorović.

In partnership with 15 other organisations from nine European countries, the Chair of Primary Wood Processing of the Department of Wood Science and Technology of the Faculty of Forestry was involved in the ID: WOOD project that lasted from 2012 to 2014. The project was funded from the European Union funds within Call 4 of the programme for Southeast Europe. Besides the then Department of TMD, the Serbian Wood Industry Cluster from Belgrade also participated in the project. The project was led by Prof. Dr. Zdravko Popović.

The Chair also participated in the project “Forest-based cross-sectoral value chains fostering innovation and competitiveness in the Danube region – FORESDA” funded by the Interreg Danube Programme. The project lasted from 2017 to 2019. Besides the Faculty of Forestry, project activities were implemented by relevant institutions from Germany, Austria, Croatia, Slovenia, Bulgaria, Bosnia and Herzegovina, Romania, and Hungary. The project was led by Dr. Goran Milić.

From 2017 to 2019, the Chair participated in the multilateral project “Danube Region Network of Wood Research Centres” in partnership with 11 other European institutions.

Teachers and associates of the Chair were the main organisers of the final COST ACTION FP1407 conference that was held at the Faculty of Forestry in Belgrade on 12-13 December 2018.

In collaboration with other chairs of the Faculty of Forestry, teachers and associates of the Chair of Primary Wood Processing organised four “Forestry and Wood Industry of Serbia” conferences from 2016 to 2019. They dealt with the current issues of the profession that were addressed by representatives of universities from the region, the economy, and other relevant institutions. These conferences have now become a tradition.

Selected projects

The staff of the Chair of Primary Wood Processing have formed long-term cooperation relationships with economic entities implemented through projects and research studies that often go beyond the boundaries of the profession and enter other fields of science.

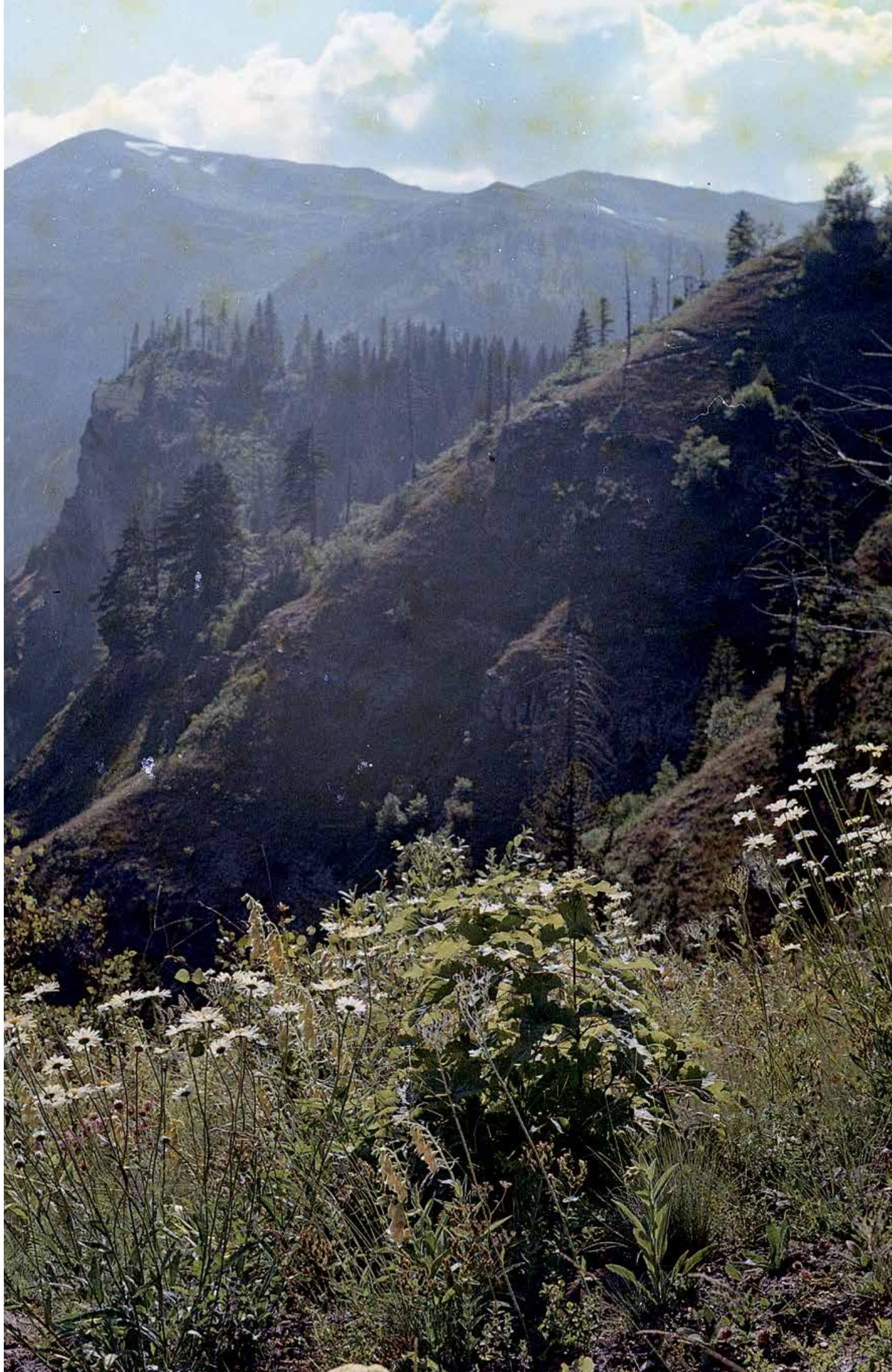
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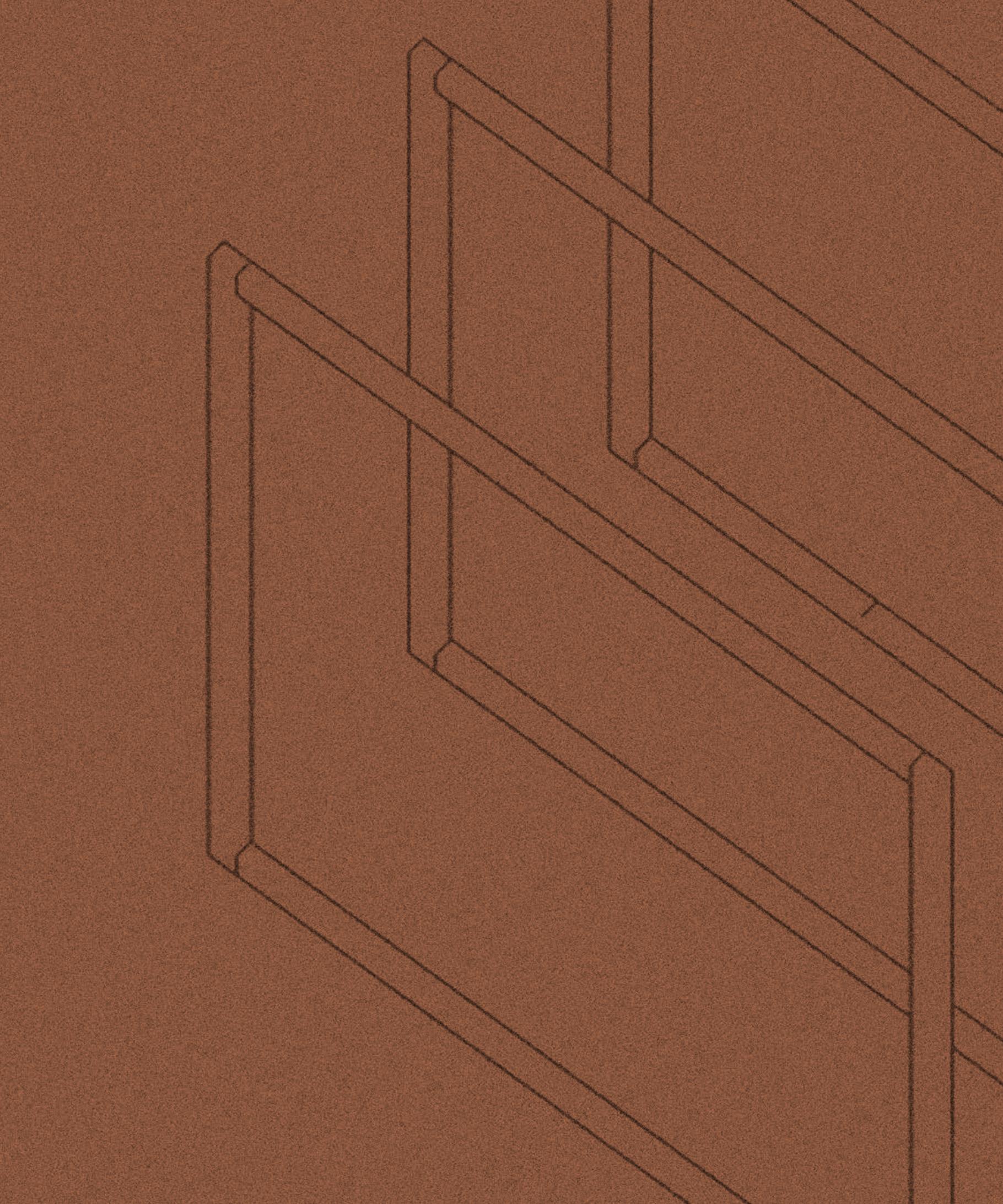
Projects of the Ministry of Science and international projects

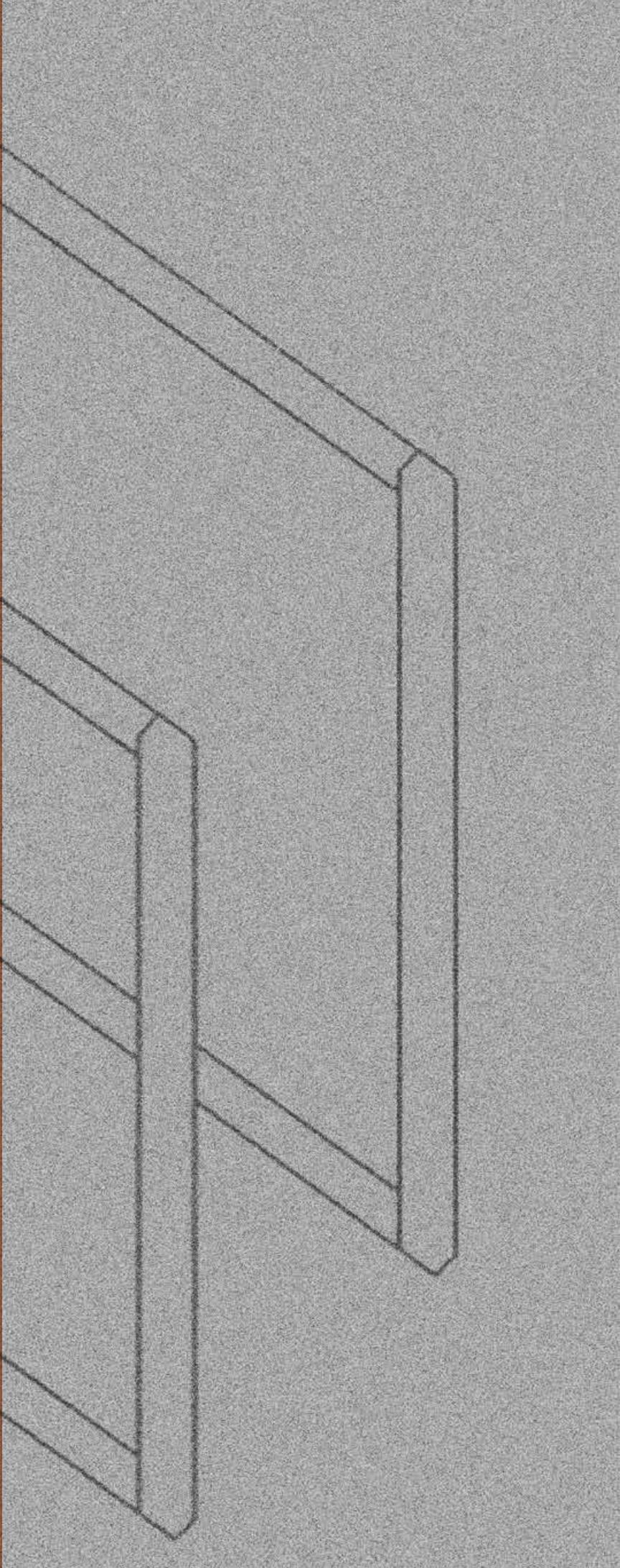
- "Exploring the possibilities of industrial processing of all available quantities of wood in FR Yugoslavia", Federal project no. T.S.I.-080 / 1-93, led by Borislav Šoškić et al., (1994–2000)
- "Improving equipment performance and technology of beechwood artificial drying", BTR.5.06.0511.B, led by Dr. Branko Kolin, Full Prof. (2001–2003)
- "Improving conventional wood drying technology from the aspect of quality and energy consumption", technological development project (2008–2010)
- "New product development for better use of wood raw materials and improvement in wood processing exports of Serbia", within the National Programme – Biotechnology and Agroindustry (2005–2008)
- "Clustering knowledge, Innovation and Design in the SEE WOOD sector (ID: WOOD)", South East Europe Transnational Cooperation Programme (2012–2014)
- "COST FP1407: Understanding wood modification through an integrated scientific and environmental impact approach (ModWoodLife)", a member of the Chair was Serbia`s representative in the Management Committee (2015–2018)
- "COST FP1303: Performance of bio-based building materials", a member of the Chair was Serbia`s representative in the Management Committee of the Action (2013–2017)
- "COST E53: Quality control for wood and wood products" (2007–2010)
- "New product development for better use of wood raw materials and improvements in wood processing exports of Serbia", within the National Programme in Biotechnology and Agroindustry, no. BTN 361005, led by Prof. Dr. Zdravko Popović (2005–2008)
- "Researching properties and quality of wood to improve sawmill processing technology and increase the production of sawn timber", technological development project no. TR 20105, led by Prof. Dr. Zdravko Popović (2008–2010)

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A technical drawing of a wood joint, specifically a half-lap joint, is shown on the left side of the page. The drawing is a line drawing on a grey background, showing two wooden beams of equal thickness overlapping in the middle. The joint is shown from a perspective view, with the beams extending into the distance. The lines are black and the drawing is precise, showing the edges and the overlapping area.

CHAIR OF CHEMICAL AND MECHANICAL WOOD PROCESSING

Text drawn up by:
Dr. Milanka Điporović-Momčilović, Full Professor

Brief history

The history of the Chair of Chemical and Mechanical Wood Processing (CMWP) began in 1956 when the Chair of Forest Chemical Technology was established at the Department of Wood Industry of the Faculty of Forestry. Its founder was the eminent professor Dr. Siniša Stanković. At that time, the courses taught by the teachers of this chair included: Chemistry, Forest Chemical Technology, Wood Chemistry, and Technology of Wood Fibre Composites.

In the early 1960s, the Department of Chemical Wood Processing was established at the Faculty of Forestry. It had two chairs: Chair of Wood Chemistry and Chair of Forest Chemical Technology. However, as early as 1963, in the reorganisation of the University of Belgrade, this department was transferred to the Faculty of Technology and Metallurgy, and Prof. Dr. Siniša Stanković and Ljiljana Majdanac, Teaching Assistant left the Faculty of Forestry in 1964. Shortly afterwards, in 1966, the two chairs merged into the Chair of Chemical and Mechanical Wood Processing, with the following courses: Chemistry, Wood Chemistry, Basics of Chemical Wood Processing, Technology of Auxiliary Materials, Technology of Wood Fibre Composites and Particleboards, and Technology of Wood Plastic Composites. Course names mostly remained unchanged to this day, with constant harmonisation of their syllabuses with the scientific advances, professional needs, and educational strategies.

Since its beginnings, this chair has had seven generations of teachers, assistants, and associates. The first generation of professors, including Prof. Dr. Siniša Stanković, Prof. Dr. Dobriša Karapandžić and Prof. Dr. Radomir Senić established distinguishable directions of the Faculty of Forestry and the structure of scientific disciplines that can be recognised even today in its basic form. They laid the foundations of the Chair and made significant contribution to the development of its courses. Prof. Dr. Siniša Stanković taught the courses in

CHAIR STAFF:

Teaching staff

Dr. Milanka Điporović-Momčilović,
Full Professor, Head of Chair

Dr. Ivana Gavrilović-Grmuša,
Associate Professor

Dr. Mlađan Popović,
Associate Professor

Dr. Milica Rančić,
Associate Professor

Dr. Jasmina Popović,
Assistant Professor

MChem Stojiljkovic Ivana,
Teaching Assistant

Professional associates and laboratory technicians

MSc Gordana Petrović,
Professional Associate

Grad. Eng. Ljiljana Đurković,
Professional Associate

Mirjana Nećak,
Technical Associate

Forest Chemical Technologies, Chemical Wood Technology, and Technology of Wood Fibre Composites. He improved both teaching and scientific research at the Chair with his enormous knowledge, commitment, and experience. He successfully founded and organised the new Department of Chemical Wood Processing. At the same time, he ran the team of the faculty members as a competent and efficient vice-dean and dean. Prof. Dr. Radomir Senić taught Technology of Auxiliary Materials, and in certain periods, Physical Chemistry, General Chemical Technology, Chemical Wood Processing, and Technology of Wood Fibre Composites. He will be remembered

as a professor who spoke several languages and shared his vast knowledge and experience with students in an engaging and witty way. As Head of the Chair, he made a great contribution to its affirmation in the scientific and professional field. Within the framework of his international engagement, his engagement as an expert of the United Nations Educational, Scientific, and Cultural Organisation (UNESCO) must be emphasised. Prof. Dr. Dobrila Karapandžić belonged to the group of the most influential professors who founded the Faculty of Forestry. She taught Chemistry. As an exceptional scientist and pedagogue, she stressed that modesty, self-criticism, and knowledge are the most valuable qualities of every engineer. She was a demanding teacher, of great reputation, but also a role model who personally helped the poor students, and thus became one of the people to mark the history of the Faculty of Forestry. At that time, teaching and professional and scientific work at the Chair was supported by teaching assistants Ljiljana Majdanac and Desimir Filipović and professional associates Radosna Dragišić and Danka Nikolić.

In the late 1950s, professors Dr. Nada Marković, Dr. Natalija Jovanović, and Dr. Nada Teržan and later Professor Dr. Vukosava Pjević joined the staff of the Chair. They made the second generation of teachers, who had no light task to keep pace with leading world universities, both in terms of teaching and scientific research. Prof. Dr. Nada Marković taught the following courses: Wood Chemistry, Chemical Wood Processing, Basics of Chemical Wood Processing, Analytical Chemistry, and Technology of Wood Fibre Composites and Particleboards. With her boundless energy and extensive knowledge, she made an invaluable contribution to the development of the course in Wood Chemistry. She also helped organise and equip the Laboratory of the Chair with modern devices. Teaching was

greatly facilitated with the arrival of Prof. Dr. Natalija Jovanović, who took over the courses in Wood Chemistry and Chemical Wood Processing. She was knowledgeable but systematic and methodical in delivering the course content. She had a gift to summarise two pages of text into one page of concise and miraculously comprehensible text. She used this natural talent and skill in writing papers and coursebooks. Professors Dr. Nada Teržan and Dr. Vukosava Pjević taught Chemistry at all departments of the Faculty of Forestry and successfully shared their knowledge of this basic field with students. Professors of the first and second generations of this chair were a strong research team whose scientific work is still an indispensable part of the growing body of world literature today. Technical support and assistance necessary for the intensive research of their time was delivered by Radosna Dragišić and Danka Nikolić, as well as Marko Đurđević, Grad. Eng. of technology and Milica Božović, Grad. Eng. of forestry for erosion control.

In the late 1970s, the team of the Chair was joined by the third-generation teachers, made up of professors Dr. Jovan Miljković and Dr. Tatjana Stevanović-Janežić. Prof. Dr. Jovan Miljković taught the courses in Auxiliary Materials and Particleboards, Fibreboards, and Wood Plastic Composites. This distinguished scholar of broad education and innate gregariousness easily built friendly relationships with colleagues abroad and thus tread new paths that ensured his younger colleagues numerous projects in cooperation with the economy and research institutions. The contribution he gave included not only coursebooks, papers, and patents, but also numerous Master of Science theses and doctoral dissertations in the field of the most modern research worldwide. This visionary leader established the Laboratory for Particleboards Testing and the Certification Body at the Faculty of Forestry. Prof. Dr. Tatjana Stevanović-Janežić taught Wood Chemistry with the Basics of



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1 Part of the staff of the CMWP Chair (2003)

Chemical Processing at that time. As a real science enthusiast, she continued her career at Laval University in Canada (Université Laval, Quebec) in 1995.

During the eighties of the last century, the teachers of the fourth generation joined the Chair: Dr. Olga Crnogorac, Assistant Professor, Dr. Biljana Bujanović, and Prof. Dr. Milanka Điporović-Momčilović. Dr. Olga Crnogorac shared her thorough knowledge of course material in Materials Science classes. Thanks to her outstanding skills in experimental and practical work, every lab experiment with her was incredibly uncomplicated, compelling, and with a touch of humour. She continued her professional career in Canada as a furniture designer at TESCO Corporation. Dr. Biljana Bujanović, as a conscientious and industrious person, made a considerable contribution to the modernisation of the practical laboratory teaching of Wood Chemistry with the Basics of Chemical Processing, which she taught with a lot of knowledge and energy. After 1999, she went to the United States, where she became a distinguished professor at the Department of Paper and Bioprocess Engineering of the SUNY College of Environmental Science and Forestry in Syracuse. Today, Prof. Dr. Milanka Điporović-Momčilović teaches Particleboards, Fibreboards, and Wood Plastic Composites. With her thorough and persistent work, she has developed new elective courses dealing with wood thermoplastic composites and nanotechnology, which today stir up considerable interest among students. With her professional knowledge, research ideas, and ambition, she has also proved to be a prolific scientist. As Head of the Chair, she worked hard to establish the Laboratory for Formaldehyde Testing and the Laboratory for Wood Composite Panel Development. She is one of the key persons responsible for the accreditation of the Laboratory for Particleboards Testing and its current head. At that time, MSc Jasna Martinović and Dragana Kosić also participated in the

teaching process of the Chair as teaching assistants. They held practical classes in Chemistry till the mid-1990s.

In the late 1990s, fifth-generation teachers joined the Chair of Chemical and Mechanical Wood Processing. Dr. Ivana Gavrilović-Grmuša was the first to join the Chair. Today, she teaches the course in Materials Science as a full professor. Thanks to her wide experience acquired through the research in the field of adhesives, she has developed a new elective course – Theoretical Foundations of Wood Adhesion.

As a diligent and systematic researcher, she has expanded the literature scope of her field of research. She also performed the duties of Undergraduate Studies Manager with absolute commitment and care for students. She actively participated in the Faculty accreditation and was engaged in the Certification Body of the Faculty of Forestry and later served as its manager. In the following year, Dr. Mlađan Popović joined the Chair. As an associate professor, he now teaches the course in Particleboards, Fibreboards and Wood Plastic Composites, while successfully developing a new elective course in the field of environmental protection in the wood industry and innovating the course in Nanotechnology in the Wood Industry. His kindness gives fresh impetus for the research and progress of the Chair. Thanks to his diligence and creativity, he has become an independent and distinguished scientific researcher. He has given an immeasurable contribution to the process of creating documentation and establishing the system of management in the accredited Laboratory for Particleboards Testing and as a quality manager of the Certification Body of the Faculty of Forestry. At the same time, Prof. Dr. Katarina Pergal and Ljiljana Čučković, Teaching Assistant, joined the Chair to teach Chemistry.

The sixth generation of teachers of the Chair includes Dr. Milica Rančić, Associate Professor, Dr. Jasmina Popović, Assistant



2 Practical lessons – students developing an experimental particleboard

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Professor, and Ljiljana Suručić, Teaching Assistant. They joined the Chair in early 2000. Today, Professor Milica Rančić teaches Chemistry. She has shown great inventiveness and commitment to introducing modern teaching methods into this fundamental course. She has also achieved valuable and recognised scientific results in the field of chemistry of heterocyclic compounds and nanotechnology. Finally, this generation of teachers was joined by Prof. Dr. Jasmina Popović, who took over the course in Wood Chemistry with the Basics of Chemical Wood Processing. She shows exceptional methodical and analytical skills, as well as a remarkable gift for the synthesis of knowledge, which makes her lectures particularly concise and interesting. She uses these skills very effectively to increase her research work scope and improve the course syllabus.

The seventh and youngest generation of teachers of the Chair includes MSc Stojiljković Ivana, Teaching Assistant, who teaches practical lessons in Chemistry. Her contribution to the development of the Chair is reflected in her interesting and creative lectures that arouse students' interest in Chemistry and increase their willingness to acquire knowledge in this field. As a studious, thoughtful, tactful, and persistent person, she is expected to refresh and enrich the research scope of the Chair.

Professional and technical support necessary for the smooth functioning of the Chair has been provided at different times by the following associates: MSc Gordana Petrović, Snežana Tintor, Mirjana Nećak, and Grad. Eng. Ljiljana Đurković.

According to available data, from its establishment till 31 October 2019, over 60 students completed undergraduate academic studies, seven students completed master's degree studies, six obtained Master of Science degrees and 16 students became doctors of science at the Chair of Chemical and Mechanical Wood Processing. There have been many changes in the curriculum of the Chair. It was significantly extended

with the introduction of elective courses in the early 2000s, following the implementation of the Bologna Process, first in undergraduate studies, and somewhat later in master's degree and doctoral studies.

Within the undergraduate study programme for Technologies, Management, and Design of Furniture and Wood Products, the Chair is in charge of the following compulsory courses: Chemistry, Wood Chemistry, Materials Science, and Particleboards, Fibreboards and Wood Plastic Composites, as well as the following elective courses: Chemical Wood Processing, Theoretical Fundamentals of Wood Adhesion, Ecology in Wood Industry, Composite Wood Products and Nanotechnology in Wood Processing (until 2013). Furthermore, the Chair teaches four courses in undergraduate vocational studies, seven in master's degree, and five in doctoral studies.

The Chair has the following laboratories: Laboratory for Particleboards and Fibreboards Testing, Laboratory for Chemical Wood Processing and Chemistry, Laboratory for Adhesives and Coatings Testing and Centre for Wood Composites, Paper, and Bioprocess Engineering.

Scientific research and professional activity

Scientific research at the Chair of Chemical and Mechanical Wood Processing can be classified into two broad groups – research in wood chemistry and chemical wood processing and research of composite boards and wood products. Bearing in mind that these are related research areas, a multidisciplinary research approach is applied at the Chair.

The research in wood chemistry and its chemical processing is conducted relative to: chemical and mechanical properties of fast-growing species for plantation cultivation and their use as raw materials in the processes of chemical and mechanical wood processing; the impact of chemical treatments on physical, mechanical, and adhesive properties of wood to improve the properties of wood by adjusting the conditions of the selected chemical treatments; determining the potential of wood as a source of “green chemicals”, i.e. chemicals obtained by processes that do not pollute the environment and have antibacterial effects as well as the potential of wood for obtaining micro and nano-cellulose particles.

In the early period of the Chair’s work, numerous research studies were conducted into the chemical composition of essential oils obtained from needles and different types of seeds of domestic conifers.

Research in the field of wood-based composite materials is aimed at improving properties and performance of composite boards and products by applying procedures of chemical modification of wood, using nanomaterials and applying scientific knowledge relating to the mechanism of wood adhesion and penetration of adhesives into the wood, as well as the impact of wood on the bonding kinetics of adhesive systems. Research has been extended to both possibilities and perspectives of the use of “green” wood adhesives, including the enhancement of strength properties of wood thermoplastic and commercial composites using nanoparticles of specific functionalities.

The professional work at the Chair further involves the engagement of its teachers and associates in the certification of particleboards and fibreboards in the Laboratory for Particleboards Testing. The Laboratory was established in 1979. Having put a great deal of effort, members of the Chair accredited the laboratory quality management system in 2003 and thus gained the recognition of the Laboratory’s competence for testing. During the accreditation period, which lasted until 2016, the Laboratory issued more than 3,600 test reports. Besides, members of this laboratory initiated the establishment of the Particleboard Certification Body at the Faculty of Forestry in 2006. This body was accredited by the Accreditation Body of Serbia.

Thanks to the successful work of the Laboratory, its members have equipped the laboratories of the Chair with devices for experimental board development and formaldehyde content testing. It has significantly improved the practical training of students and enhanced the quality of professional and scientific research.

The Chair has achieved long-term cooperation with economic entities through the realisation of projects related to reconstruction and optimisation of the production of wood panels by introducing adhesives of adjusted characteristics, applying different furfural-based derivatives as a substitute for the industrial part of adhesives, adjusting the process parameters to reduce formaldehyde emissions from composite boards, etc. Our teachers have often cooperated with domestic wood processing companies by organising production quality control training. The training was performed either on the premises of factories or at the Faculty. In the period of the industrialisation of the former SFRY, nearly all factories in Serbia, Bosnia and Herzegovina, Montenegro, and Macedonia hired professors of this chair to make technological designs of newly-built



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factories of groundwood, semi-cellulose, cardboard, corrugated cardboard, MDF boards, and particleboards. Thanks to the expertise and reliability of our professors, long-term cooperation has been secured between our chair and most of the factories. Among others, our chair has cooperated with the following factories: “ŠPIK Ivanjica”, “ŠPIK Velimir Jakić”, “ŠPIK Simpo” solid fibreboard factory in Kuršumlija, veneer plywood factories of “ŠPIK Kučevo”, wood combine from Sremska Mitrovica, and “Viskoza” from Loznica before it was closed down. The quality of the cooperation with the company “Kronošpan SRB” in Lapovo has been proved by the professional practical training of students in its production plants during summer. There, our students acquire very valuable practical knowledge and skills which they readily apply in the preparation of their graduation papers.

Besides, members of the Chair have been participating in the commissions for the development and adoption of Serbian standards related to wood panels and wood adhesives, as well as working groups for drafting the Rulebook on Requirements for Particleboards at the request of the Ministry of Economy. In the certification period, the Chair has created an extremely active cooperation network with numerous consumers and importers of particleboards and fibreboards and kept a continuous record of their quality on our market. Through these activities, our teachers have made a significant contribution to the development of quality control systems in the Republic of Serbia in the field of wood panels and wood adhesives.

Such a synergy between the economy and teachers and associates of this chair has resulted in numerous scientific and professional papers, monographs, course packets, coursebooks and patents. Since the establishment of the Chair, its members have published over 600 scientific and



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professional papers in national and international journals and proceedings of domestic and international conferences. Furthermore, over 60 studies and expertise reports and two patents have been produced and 46 papers have been published in SCI journals.

3 Practical lessons – students working on wood modification in pallet-making autoclaves

4 Accreditation of the Laboratory for Particleboards and Fibreboards Testing

Cooperation with other institutions

Today, as throughout its history, the Chair of Chemical and Mechanical Wood Processing encourages and promotes scientific and professional cooperation with other scientific institutions and business entities at home and abroad.

In cooperation with institutions outside the faculty, teachers of the Chair of Chemical and Mechanical Wood Processing have served as permanent or temporary associates of chemical wood processing plants and combines for wood-based composite board production. Teachers of this chair have often had the role of permanent or temporary expert reporters, arbitrators, or advisors in cooperation with the Chamber of Commerce of the former SFRY, and today Serbia, the Ministry of Economy, the Supreme Commercial Court, investment banks, and other institutions with common interests. Their professional cooperation has also been achieved through membership in professional domestic associations, such as Serbian Chamber of Engineers, Serbian Chemical Society and international associations, such as European Cooperation in Science and Technology (COST), Society of Wood Science and Technology (SWST) and the Forest Products Society (FPS) from America.

The multidisciplinary character of the courses developed at the Chair has initiated cooperation with related faculties in our country and abroad, especially with the Faculty of Technology and Metallurgy, University of Belgrade and Novi Sad, the Faculty of Agriculture, the Faculty of Chemistry, the Faculty of Veterinary Medicine, University of Belgrade, Ludwig-Maximilian University in Munich, University of Hamburg and its Institute for Forestry and Forest Products of the Biotechnical Faculty, University of Ljubljana, State Wood Industry Institute in Bratislava and the Faculty of Wood Sciences and Technology at the Technical University in Zvolen. Furthermore, the Chair has many years of diverse cooperation with the Institute for Material Testing in Belgrade, which enables the exchange of

experiences in the process of wood-based material quality assessment, as well as with the Institute for Nuclear Sciences – Vinča, IHTM, and the Institute of Chemistry in Belgrade.

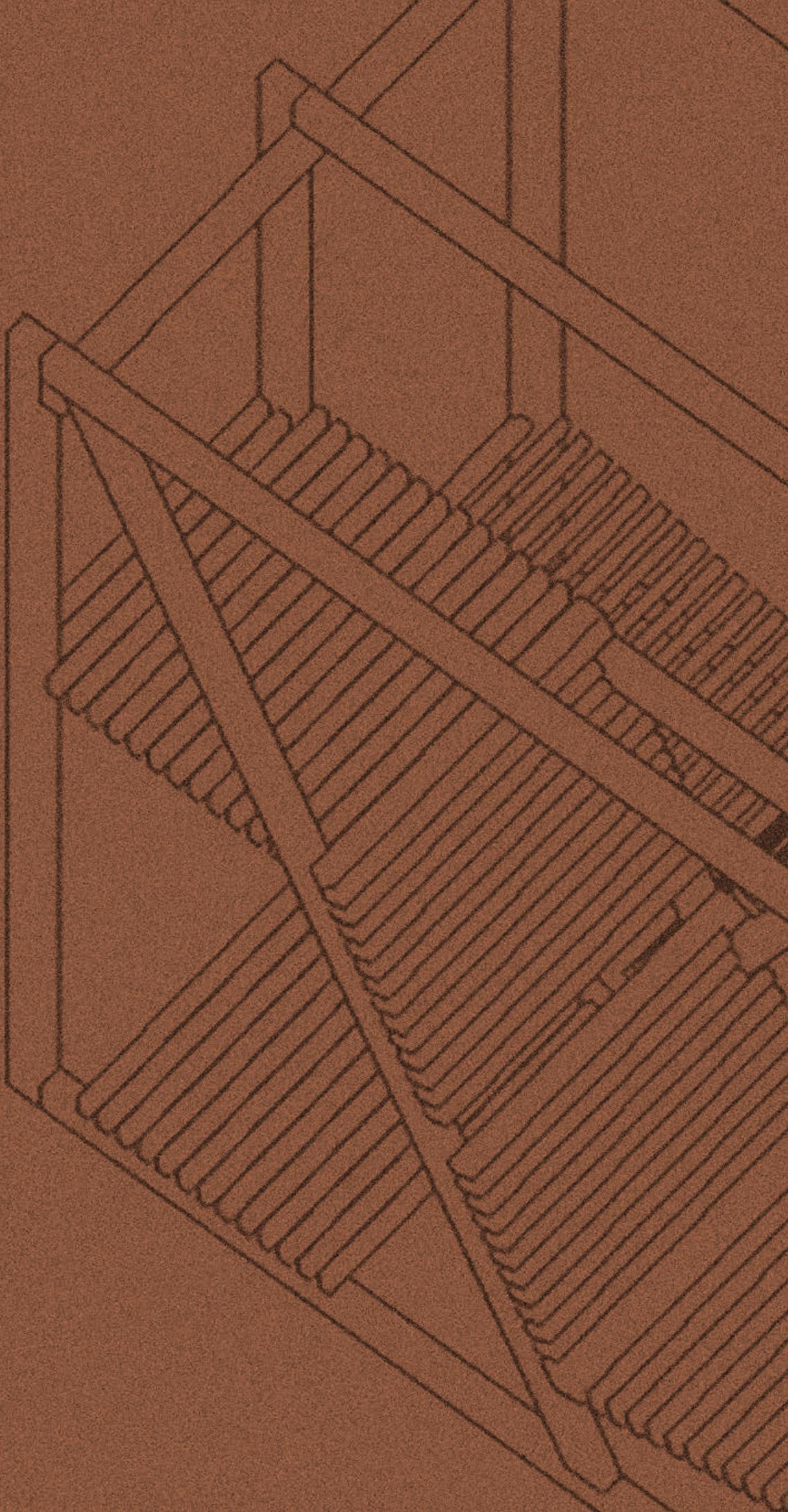
Since the cooperation with domestic and foreign institutions has enriched members of our chair with fresh scientific and professional knowledge and new skills, their motivation to further increase this knowledge is even greater today.

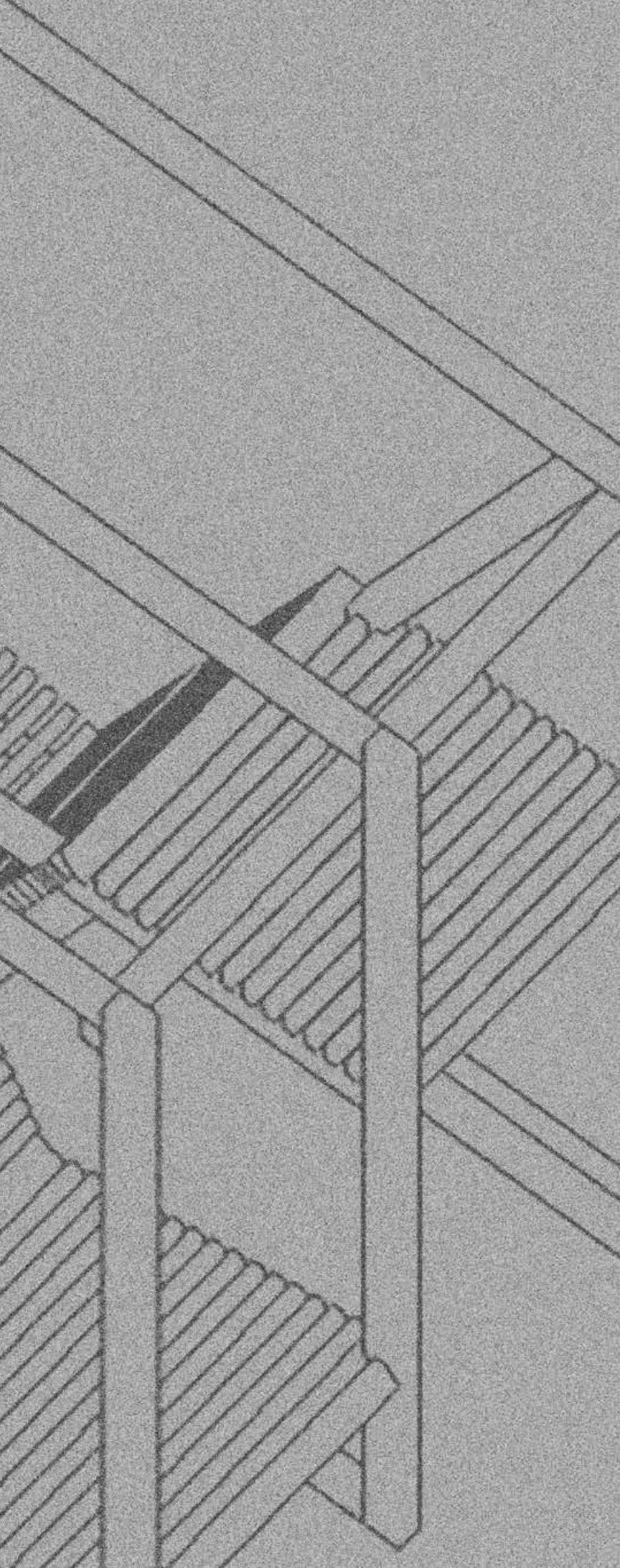
Selected projects

- “New materials and procedures in chemical-mechanical wood processing”, Science Fund of the Republic of Serbia, subproject leader Prof. Dr. Miljković (1985–1990)
- “Development of new composites based on polypropylene as matrix and wood particles as reinforcement and active component”, a scientific-research project of the Faculty of Forestry and “HIPOL” Chemical Industry from Odžaci, led by Prof. Điporović (1995–1997)
- “Production of water-resistant plywood TP-100 with hybrid UMF glue and plywood quality control in ‘ŠIK KUČEVO’”, a study, Belgrade (1998)
- “Pre-investment programme for the reconstruction of the particleboard factory ‘ŠPIK Ivanjica’”, Ivanjica, Faculty of Forestry, Belgrade (1998)
- “Optimisation of the production of TP-100 plywood”, a study done for the needs of ‘ŠIK Kučevo’”, Faculty of Forestry, Belgrade (2004)
- “Bonding of lignocellulosic fibres and synthetic polymers in composites”, an American-Yugoslav project of the Faculty of Forestry in partnership with the University of Wisconsin from Madison in American Yugoslav Committee through the Federal Institute for International Scientific and Technical Cooperation (1991)
- “Complex use of wood raw materials, a project of the Faculty of Forestry in Belgrade and the State Wood Industry Institute from Bratislava”, Czechoslovakia, realised through the Republic Institute for International Scientific and Technical Cooperation (1990)
- “Wood-based composite materials”, a bilateral project of the Faculty of Forestry in Belgrade and the Faculty of Wood Sciences and Technology in Zvolen, Czechoslovakia, realised through the Republic Institute for International Scientific and Technical Cooperation (1991)
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CHAIR OF FINAL WOOD PROCESSING

Text drawn up by:
Dr. Igor Džinčić, Associate Professor

Brief history

According to the curriculum of the 1956 Statute, there were 33 courses at the Department of Wood Industry. The same Statute envisaged two chairs of the Department: Chair of Primary Wood Processing and Chair of Final Wood Processing.

The courses related to management and economy of both departments were assigned to a common chair. At the time, primary wood processing had already undergone significant expansion. On the other hand, final wood processing (manufacture of furniture and carpentry) had just started its industrial production. This situation was clearly reflected in the 1956 curriculum. However, the growth of the Chair of Final Wood Processing which started in 1956 has not stopped to date. This growth has always been closely linked to technological advancement. A large number of new courses that have been introduced into the curricula (over 15 since the establishment of the Chair) and the Chair of Machines and Apparatuses in Wood Processing that emerged from the Chair of Final Wood Processing in 2002 confirm this statement.

These changes have significantly affected the number and type of courses at the Chair of Final Wood Processing. They now include the following courses related to the narrow scientific field: Final Wood Processing, Surface Wood Processing, and Constructions of Wood Products as compulsory courses, and Design, Furniture Design, Organisation of Space, Interior Design, and Upholstered Furniture as elective courses. Besides, Descriptive Geometry used to be a preparatory course of the Chair. In 2008, the following electives were added to the Chair of Final Wood Processing: Adhesion in Final Wood Processing, Use of Wood in Construction, Engineering Graphics, and Introduction to Methodical Design. The 2012 curriculum introduced elective courses in Technology of Construction Joinery Production and Technology of Wooden Houses Production.

CHAIR STAFF:

Teaching staff

Dr. Igor Džinčić,
Associate Professor, Head of Chair

Dr. Tanja Palija,
Assistant Professor

Dr. Gordana Đukanović,
Assistant Professor

MA Jelena Matić,
Full Professor

Professional associates and laboratory technicians

Grad.Eng. Želimir Marković,
Professional Associate

Slobodan Oreščanin,
Laboratory Technician

The Chair of Final Wood Processing had two modules in the master's degree study programme which was first introduced at the Department of Wood Processing in academic 2007/2008 – a module in Wood Product Modelling and a submodule in Final Wood Processing within the Wood Processing Technologies module. The module in Wood Product Modelling had the following courses: Wood Product Modelling, Interior Furnishing, Interior Wood Constructions, Final Product Quality Assurance, and History of Furniture Design, while the courses of the Final Wood Processing submodule included Technology of Wood Products in Construction and Wood Accessories, Surface Treatment of Exterior Wood, Interior Wood Constructions, Final Product Quality Assurance and Automation of the Varnishing Process. There have been several generations of teachers and associates at the Chair. They have left an indelible mark on the scientific and professional public: full professors – Bogoljub Kršljak, Branko Petričić, Dragomir Stošić, Dušan Skakić, Gradimir Danon, Milan Jaić, Milan Potrebić, Petar Todorović, Rade Zaplotnik, Sokol Sokolović, and Jelena Matić; associate professors – Aleksandar Dedić, Aleksandar Janković, Biserka

Nestorović, Igor Đžinčić, Radivoje Gvozdenović, Srđan Žikić; assistant professors – Borislav Jovanović, Branislav Podlošek, Dragan Lukačev, Gordana Vasiljević, Jelena Maksić, and Tanja Palija; teaching assistants and associates – Aleksandra Burda, Almir Krđžović, Ivanka Milošević, Miljana Nikolić, Miroslav Sekulić, Rajka Živanović, Ratko Marković, Želimir Marković, and Zoran Đurišić; senior lecturers – Stevan Smiljanski; senior professional associates – Miodrag Mihajlović, Radivoje Banković, Strahinja Lubardić, and Tomislav Matić.

The Chair Institute, Laboratory, and Centre

The Institute for Furniture Quality Control, the Laboratory for Surface Wood Processing, and the Centre for Interior and Furniture Design and Engineering are functional units of the Chair of Final Wood Processing used by its members to perform professional and scientific activities.

The Institute for Furniture Quality Control belongs to the Faculty of Forestry, University of Belgrade where it operates as an independent organisational unit. It was founded in 1975 at the initiative of Dr. Milan Potrebić, Full Professor. It was then called the Furniture Quality Control Laboratory. The laboratory has been issuing reports on furniture quality testing since 1977. At the time, the Laboratory employees were Grad. Arch. Tomislav Matić, Professional Associate, Eng. Predrag Stanković, Laboratory Technician and Grad. Eng. Biserka Nestorović from 1980.

The accreditation process started in 2002 under the leadership of Dr. Dušan Skakić (who was the manager from 2000) and with the strong support of MSc Biserka Nestorović, Teaching Assistant, eng. Predrag Stanković, Laboratory Technician, and Slobodan Oreščanin, Technician. The laboratory then changed its name to the Institute for Furniture Quality Control. The Institute was accredited by the Accreditation Body of Serbia (ATS) on 10 December 2003 as the first quality control organisation of the University of Belgrade in line with the international system of quality and standard SRPS ISO/IEC 17020: 2002. Since then, the Institute has been issuing reports on furniture quality control.

Since 2009, the Institute has been supplied with state-of-art numerical equipment for furniture quality control. The procurement of new equipment increased its capacity to perform controlling and testing. MSc Igor Džinčić, Teaching Assistant, started work at the Institute in the same year.

In 2010, Dr. Biserka Nestorović, Assistant Professor, became the head of the Institute. The Institute confirmed its competence to implement new control methods according to EN standards.

After Dr. Biserka Nestorović, Associate Professor, retired in 2018, Dr. Igor Džinčić, Associate Professor, took over the management of the Institute. In the same year, Dr. Tanja Palija, Assistant Professor, and Grad. Eng. Želimir Marković, Professional Associate, become permanent members of the Institute.

The compliance of the activities conducted by the Institute for Furniture Quality Control with the standard of accreditation was monitored by the Accreditation Body of Serbia in 16 successful supervisory evaluations and three reaccreditations. The last control was completed according to standard SRPS ISO/EC 17020: 2012 in 2019.

The Laboratory for Surface Wood Processing was established in 1977 when the course in Final Wood Processing gave rise to a new course in Surface Wood Processing. The Laboratory was about 65 m² in size and belonged to the “Kordun” Carpentry and Tool Sharpener Workshop. After a teaching assistant for the course in Surface Wood Processing had been elected, the staff began to rearrange and equip the laboratory space.

At first, with the assistance of the Director of the Institute for Wood Processing, Dr. Avdo Redžić, Full Professor, eight job positions were created to help perform laboratory classes. These classes helped students learn how to determine the properties of coating in the liquid state or as an applied and hardened film.

The laboratory owned a cabin with water purification for sample varnishing and equipment for coating application (compressors and sprayers). There were hand grinders used to prepare surfaces for painting and polishers used to obtain a high gloss after varnishing.

In order to build the amphitheater, the Laboratory was moved out of its room and only the small equipment was preserved. It was moved into a new room in 2000.

Thanks to the efforts of Dr. Dušan Skakić, Full Professor, and Head of the Institute for Furniture Quality control, funds were allocated for equipping the laboratory with modern devices for testing the quality of varnished surfaces (strength of adhesion, hardness, gloss, dry film thickness, etc.). It was now possible again to conduct laboratory classes in Surface Wood Processing and master’s degree courses in Surface Treatment of Exterior Wood and Automation of the Varnishing Process.

In 2013, the Laboratory equipment was improved with small auxiliary and measuring instruments that facilitated the preparation and performance of the testing process. In 2018, the Laboratory received donations from the economy to introduce new grinding job positions.

The Laboratory was managed by Dr. Milan Jaić, Full Professor, from its establishment to 2018 when he retired. His contribution to the improvement of the Laboratory was particularly important regarding its equipment at the time of its establishment and the establishment and execution of laboratory practical classes in the previous space.

Today, besides laboratory practical classes, the Laboratory conducts testing in the field of surface wood processing necessary for graduation papers, master’s theses, doctoral dissertations, and scientific papers.

So far, two Master of Science theses, one master’s thesis and two doctoral dissertations have been published. A number

of papers have been published in scientific journals or presented at international scientific conferences.

The laboratory has also established different forms of cooperation with companies that deal with surface wood processing (training, counseling, etc.).

The Centre for Interior and Furniture Design and Engineering was founded in 2004 at the Chair of Final Wood Processing. The need for the establishment of the Centre was recognised when the curriculum of the Chair introduced a new educational module in furniture and interior design, with several courses of the narrow professional and artistic field, such as Modelling of Wood Products, which were for the first time studied at the Faculty of Forestry. To foster the rapid and comprehensive development of new disciplines and educate experts with a broad engineering background who can develop new concepts in the furniture industry, the Centre for Interior and Furniture Design and Engineering has realised a great number of activities.

During its fifteen years of existence, the Centre has been intensively working on fulfilling its goals and realised a large number of activities, among which as many as 54 solo (two international and 52 national) and 74 joint exhibitions (31 international and 43 domestic) of the Department of Wood Technology. The achievements of the Centre were presented at some of the most relevant events in the field: Cologne International Furniture Fair (IMM Cologne) – Pure Talents, International Furniture Fair in Milan (Salone Internazionale Del Mobile di Milano) – Salone Satellite, and the International Furniture Fair in Copenhagen – Talent Zone.

The hard work of the Centre has resulted in as many as 85 awards at domestic and international competitions, the most important ones being: The Golden Key of the Belgrade Furniture Fair, Architecture Salon Award, ULUPUDS Award, International Award of Young Balkan Designers, Award for the best scientific research and professional work at the University of Belgrade, Report design award nomination of the Milan Furniture Fair, awards for the best design solution of the Belgrade Chamber of Commerce, Award of the Inclusive Society Development Centre, Award at the competition for furniture design of the Wood Agency, Award of the Serbian Association of Inventors.

On the occasion of the 90th anniversary of the Faculty of Forestry, the project “First Collection of Furniture of the University of Belgrade” was launched in 2010 in collaboration with students of the module in Furniture and Interior Design. A unique collection of 37 most awarded prototypes that resulted from many years of Centre’s efforts to achieve sustainable creativity, was presented to the public on premises of the Faculty of Forestry. At the initiative of the University, in 2017, a spatial installation project containing an integrated and digitised collection of 148 wood species called “Xylotheque” was presented at the annual conference of the European Academic Heritage Network UNIVERSEUM and included in the collection of the Academic Heritage of Serbia.

Centre staff:

- Managers – Dr. Sokol Sokolović, Full Professor (2004-2008) and MA Jelena Matić, Full Professor (2009 to date)
- Professional associates – MA Jelena Matić, Teaching Assistant (2004–2008), Grad. Eng. arch. Miljana Nikolić, Teaching Assistant (2011–2013) and Grad. Eng. arch. Aleksandra Burda, Teaching Associate (2013–2015)

Scientific research and professional activity

Given the character of the disciplines studied at the Chair, scientific research can be divided into four major fields, i.e. final wood processing, surface treatment of wood, furniture construction, and quality of furniture and wood products.

Furniture quality control and determination of the quality conformity are performed according to Serbian (SRPS) and European (EN) standards and according to special requirements. Over 90% of the Institute's accredited control methods are in line with EN standards.

Quality control refers to safety, material, and accuracy of construction, stability, durability, and resistance of surface treatment of wood for all types of furniture: seating furniture, bedroom furniture, storage furniture, working and dining furniture, children's cots, children's high chairs, office furniture, school furniture, and garden furniture.

A special segment of research is related to the improvement of the products of the final industry of furniture and furniture parts. Cooperation with furniture manufacturers in product development and production quality control is an important aspect of the work performed by our Chair staff members.

The Chair has ensured effective cooperation with economic entities through the engagement of its teachers and associates in their promotion. The projects conducted to meet the needs of the economy for the design and construction of wood processing and furniture manufacture companies have almost always included experts of this chair.

Another important aspect of the professional engagement of our staff refers to their participation in the commissions for drafting, amending, and adopting Serbian standards in the field of quality control of furniture, construction joinery, children's playgrounds and toys.

The Centre for Interior and Furniture Design and Engineering performs the following activities: participation in

scientific, development, research, and professional artistic projects; vertical connection of economic entities to increase the finalisation of wood raw materials; promotion of competitiveness, productivity, innovation and new modern technologies intended for wood processing in Serbia; organisation of professional conferences, seminars and workshops with the topics of the narrow artistic and scientific field of wood product modeling; basic and additional education and training programmes to meet the needs of the final wood industry sector of Serbia.

Such numerous activities and rich experience of teachers and associates have resulted in a substantial number of scientific and professional papers, monographs, and other scientific and professional publications. Since its establishment, teachers and associates of the Chair have published over 1,000 scientific and professional papers in national and international journals and proceedings of national and international conferences.

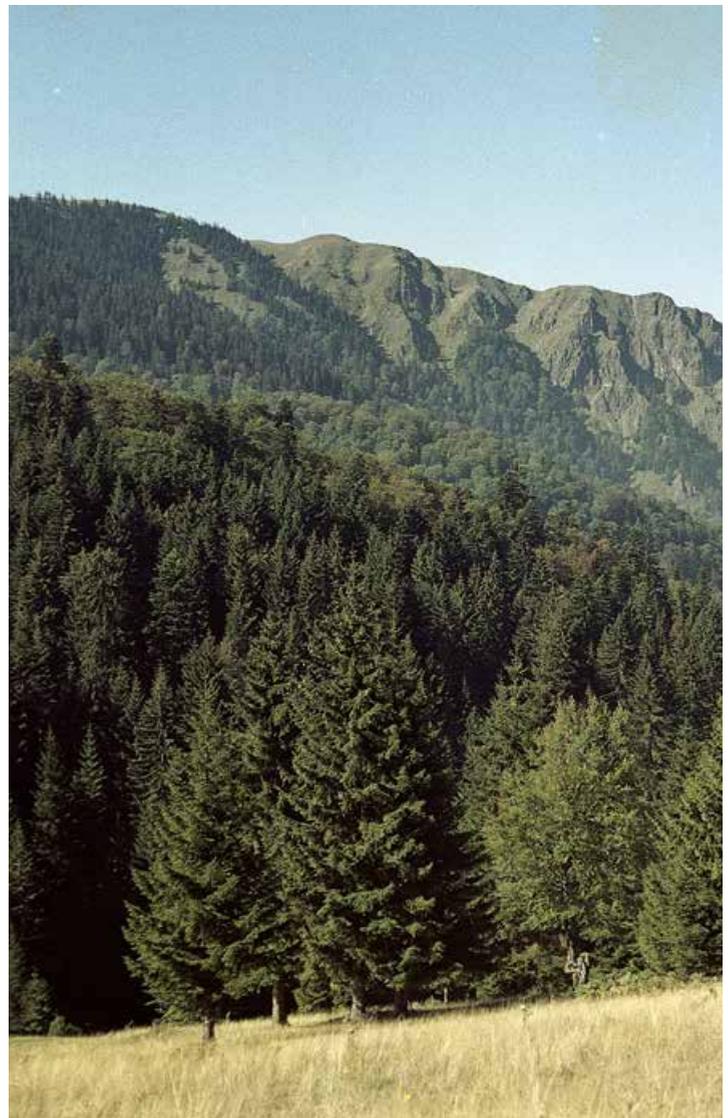
The experiments performed by students at the Chair have resulted in about 50 graduation papers, about 15 master's theses, three Master of Science theses and three doctoral dissertations. A large number of scientific and professional papers and educational articles have also been published.

Cooperation with other institutions

In the past decades, fruitful cooperation has been achieved with numerous national and international institutions and organisations.

Interlaboratory cooperation in the field of furniture quality control has been achieved with almost all eminent laboratories in Europe: Faculty of Forestry in Skopje, Faculty of Forestry in Zagreb, Euroinspekt wood control from Slavonski Brod, CATAS Udine Italy, AIDIMA Valencia Spain, Bureau veritas consumer products services UK LTD Cheshire and FIRA Stevenage the United Kingdom, Berner Fachhochule –Architektur, Holz und Bau – Biel Switzerland, Danish Technological Institute – Taasttrup Denmark, FCBA Paris and Steelcase S.A. – Sarrebourg France, Holzforschung Austria – Wien Austria, IKEA test laboratory – Almhult and Kinnarps AS – Kinnarp Sweden, Scandinavian business seating AS – Roros Norway, TUV Rheinland LGA Products GmbH – Nurnberg and Dresden Germany.

Through joint projects and exchange of experience, the Centre has particularly encouraged cooperation with other higher education and scientific research institutions both in the country (Faculty of Applied Arts in Belgrade, Faculty of Architecture, Faculty of Technical Sciences in Novi Sad, Faculty of Electrical Engineering in Belgrade, Faculty of Philology and Arts in Kragujevac) and abroad (University of Design – Staatliche Hochschule für Gestaltung Karlsruhe from Germany, University of Thessaly, Faculty of Wood and Furniture Design in Karditsa, Greece).



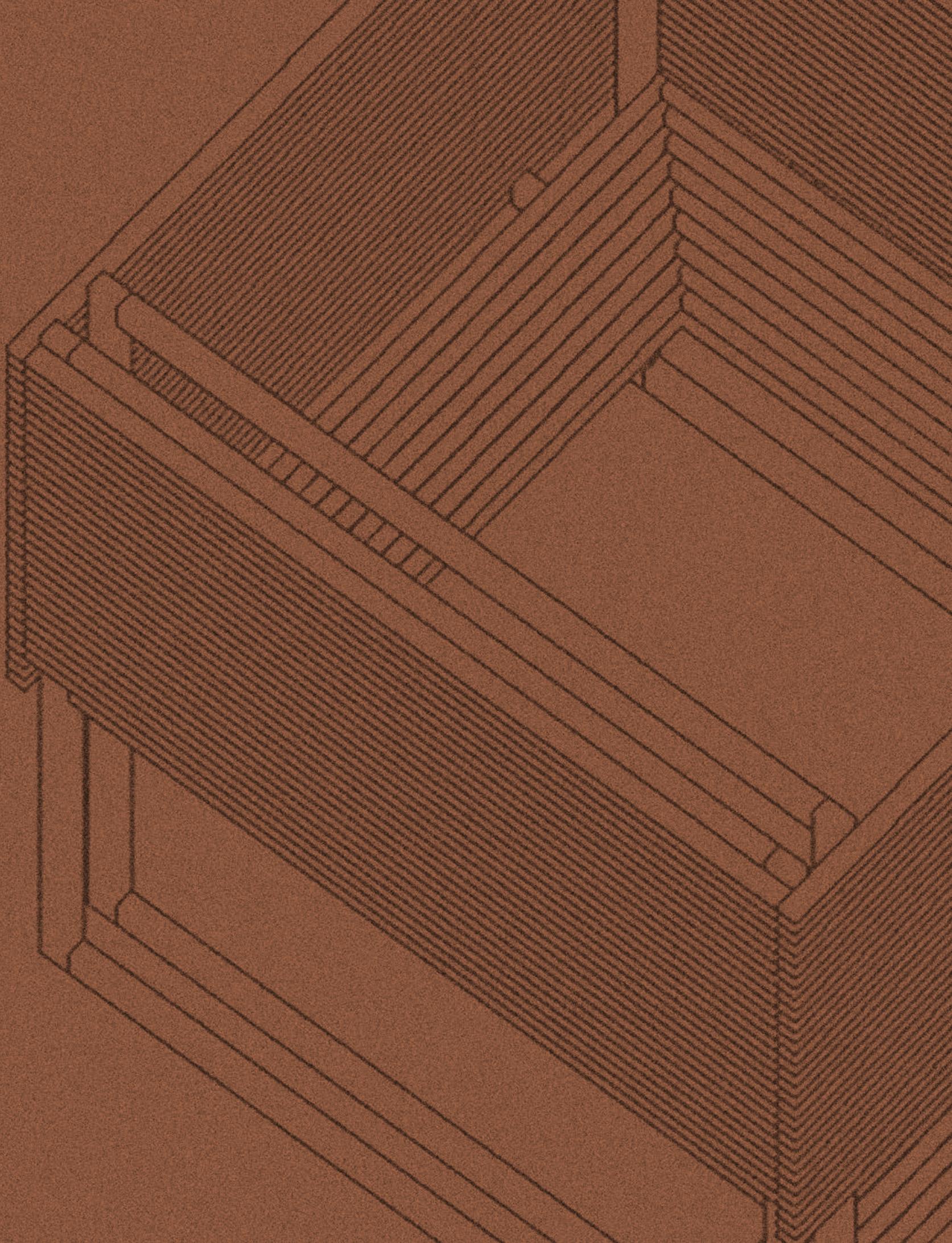
Selected projects

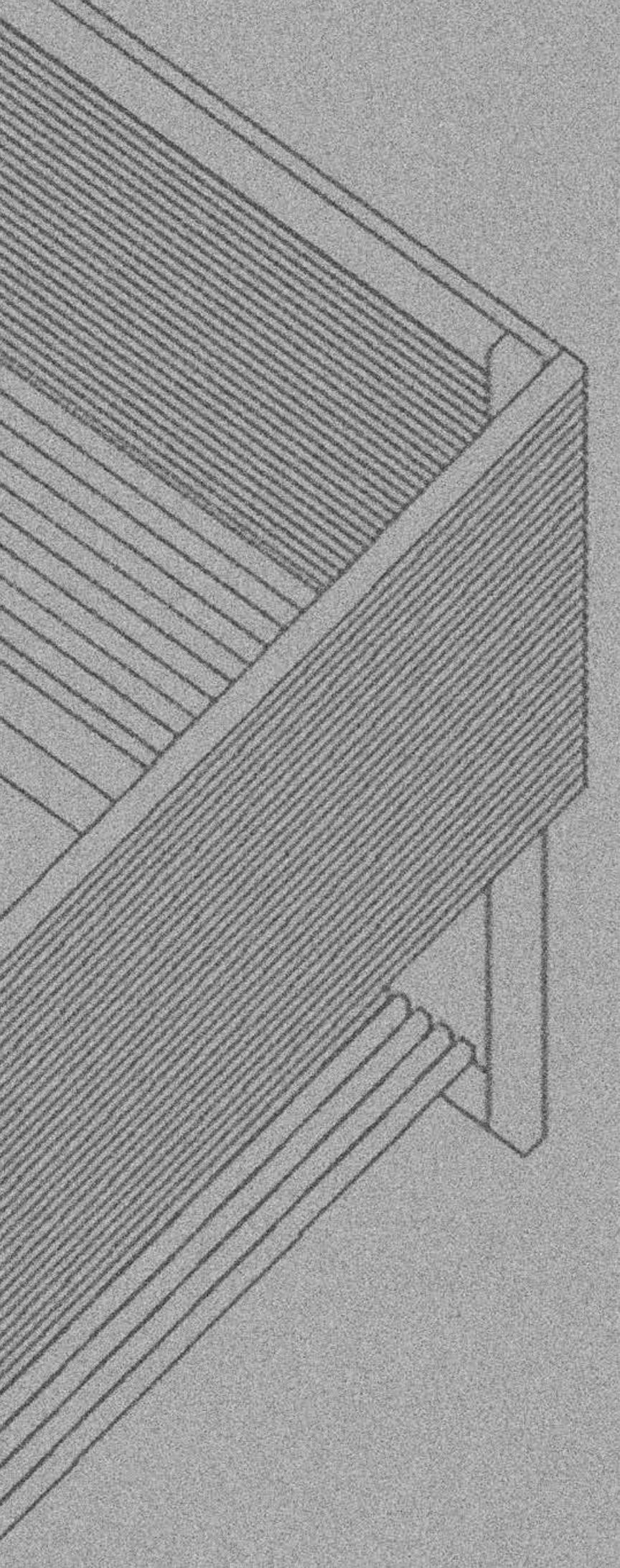
National projects and studies

- “Study on test and certification demand for doors and windows and solid biofuels”, International Study, Deutsche Gesellschaft für Internationale Zusammenarbeit (2012)
- “Private sector development in South Serbia”, financed by SDC, and implemented by Agency VEEDA (2013)
- “Improvement of wood technologies in correlation with properties of chemical constituents of wood”, subproject “Quality of surface treatment and wood protection in the interaction of applied organic coating materials with chemical constituents of wood”, Reg.No. RZN Serbia P5.0413, Jaić M., Živanović R. (1995)
- “Exploring the possibilities of industrial processing of all available quantities of wood in the FRY”, subproject “Research of properties, quality, biodegradation, and the regime of solid wood and wood-based product processing”, topic “The role of the quality of surface treatment in the quality of final products”, scientific project of the Federal Ministry of Science and Environment T.S.I. 080 / 1–93 Jaić M., Živanović R. (1993)

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CHAIR OF MACHINES AND APPARATUSES IN WOOD PROCESSING

Text drawn up by:
Dr. Mladen Furtula, Assistant Professor

Brief history

The Chair of Machines and Apparatuses in Wood Processing is one of the youngest chairs of the Wood Science and Technology Department. Although a young chair, the field it studies is among the oldest at this faculty. The first course in the field of Machines and Apparatuses in Wood Processing in Serbia was introduced into the curriculum by the Decree of the Faculty of Agriculture in Belgrade on 21 September 1924. It was Elements of Woodworking Machines and Installations. According to the Statute of the Faculties of Agriculture and Forestry in Belgrade and Zagreb enacted on 30 May 1939, the curriculum of the Department of Forestry had 39 courses, with Fundamentals of General Mechanical and Electrical Engineering as one of them.

Besides Fundamentals of General Mechanical and Electrical Engineering, the newly-established Department of Wood Industry of the Faculty of Forestry, University of Belgrade, founded in 1956 had courses in Internal Transport Machines and Equipment, Driving and Overhauling Machines and Devices, Working Machines and Devices in Mechanical Wood Processing at the Chair of Primary Wood Processing. By the Statute of 1960, the courses in Woodworking Machines and Tools and Internal Transport Machines and Equipment were transferred to the Chair of Final Wood Processing, where they were taught until the establishment of the Chair of Machines and Apparatuses in Wood Processing, while Mechanical Engineering with Electrical Engineering, Engineering Mechanics, and Physics remained at the Chair of Primary Wood Processing. According to the Statute of the Faculty of 1973, Mechanical Engineering with Industrial Energetics was transferred to the Chair of Final Wood Processing. Finally, Technical Physics and Elements of Regulation Technics became courses of this chair by the Statute enforced in 1987.

CHAIR STAFF:

Teaching staff

Dr. Aleksandar Dedić,
Full Professor

Dr. Mira Mirić-Milosavljević,
Assistant Professor

Dr. Vladislava Mihailović,
Assistant Professor

Dr. Srđan Svrzić,
Assistant Professor

Dr. Mladen Furtula,
Assistant Professor, Head of Chair

Dr. Marija Đurković,
Assistant Professor

Professional associates and laboratory technicians:

MEng Goran Milutinović,
Higher Education Associate

Grad. Eng. Aleksandra Svrzić,
Higher Education Associate

The Chair of Machines and Apparatuses in Wood Processing was founded on 29 August 2002. The Chair was composed of teachers, associates, and laboratory technicians of the disbanded Chair of Final Wood Product Design and the Chair of Final Wood Processing. At that time, the Chair was in charge of the following courses: Technical Physics (first year of undergraduate studies), Technical Mechanics (first year of undergraduate studies), Fundamentals of Mechanical Engineering (second year of undergraduate studies), Elements of Regulation Technics in Wood Processing (second year of undergraduate studies), Internal Transport (third year of undergraduate studies), and Machines and Apparatuses in Wood Processing (third year of undergraduate studies).



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At the time of its establishment, the Chair had five teachers and six associates. They were: Dr. Petar Todorović, Full Professor, Dr. Milutin Marjanov, Full Professor, Dr. Gradimir Danon, Full Professor, Dr. Dragan Lukačev, Assistant Professor, Dr. Aleksandar Dedić, Assistant Professor, MSc Nataša Atanackov, Teaching Assistant, MSc Zoran Đurišić, Teaching Assistant, Mira Mirić Milosavljević, Teaching Assistant Trainee, Vladislava Mihailović, Teaching Assistant Trainee, Dragan Jančevski, Teaching Assistant Trainee, Srđan Svrzić, Teaching Assistant Trainee, and Milan Vujković, Laboratory Technician.

New members joined the Chair later. Grad. Eng. Mladen Furtula (2003) and Grad. Eng. Marija Mandić (now Đurković) (2009) joined the Chair as teaching assistants and Goran Milutinović and Aleksandra Svrzić as associates. Today, there are fewer members at the Chair because some members have retired, some have left the Faculty, and MSc Zoran Đurišić, Teaching Assistant, passed away in 2008.

According to the new accreditation of study programmes of September 2020, teachers of the Chair of Machines and Apparatuses in Wood Processing teach five vocational study courses (four compulsory and one elective), ten courses of undergraduate studies (seven compulsory and three elective), five master's degree courses and eight doctoral courses.

Since the establishment of the Chair of Machines and Apparatuses in Wood Processing, more than 100 students have completed undergraduate studies, several dozen students have defended their master's thesis, one has obtained a Master of Science degree and four candidates have completed doctoral studies.

The Chair has got four laboratories: Laboratory for Technical Physics and Measurement and Regulation Technics, Laboratory for Machines and Apparatuses in Wood Processing,

Laboratory for Tool Preparation and Sharpening, and Laboratory for Mechanical Engineering.

There are also three centres: Centre for Machines and Apparatuses in Wood Processing, Centre for Biomass, and Centre for Computer Numerical Control Wood Processing Machines.

1 Laboratory for Machines and Apparatuses in Wood Processing

Scientific research and professional activity

For many years, the Chair has promoted extremely successful cooperation with many scientific and educational institutions and organisations, both at home and abroad. This cooperation has been achieved through its membership in international and domestic academic associations and participation in various projects of regional and international importance.

Members of the Chair have participated in international conferences. Professor Dr. Petar Todorović was the representative of Serbia in COST (European Co-operation in Science and Technology) Domain Committee for Forests, their Products, and Services, initiator, manager, and rapporteur in COST E35 action “Fracture mechanics and micromechanics of wood and wood composites with regard to wood machining”, as well as rapporteur on international scientific actions COST E40 “Innovative utilisation and products of large dimensioned timber including the whole forest-wood-chain” and E53 “Quality control for wood and wood products”.

At the national level, we must stress the cooperation with the Ministry of Education, Science, and Technological Development of the Republic of Serbia, the Development Agency of Serbia, as well as with the Institute for Standardisation of Serbia, realised through the participation of our teachers in the work of their bodies. Prof. Dr. Gradimir Danon was the chairman of the committee that drafted standards (KS M039-4) related to wood processing machinery for over ten years. He was succeeded in that position by Dr. Marija Đurković in 2018. Dr. Mladen Furtula has also participated in the work of this committee as well as the committee that drafts standards related to solid biofuels (KS B238).

The interdisciplinary and multidisciplinary character of scientific disciplines that are studied at the Chair of Machines and Apparatuses in Wood Processing, as well as the expertise of the teaching staff, have initiated successful cooperation with other

faculties in our country and abroad. Among others, we would like to stress the cooperation with the Faculty of Mechanical Engineering and the Faculty of Civil Engineering of the University of Belgrade, the Faculty for Furniture and Interior Design and Technology of the University of St. Cyril and Methodius in Skopje, the Faculty of Forestry of the University of Zagreb, and the Biotechnical Faculty of the University of Ljubljana.



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2 Laboratory for Technical Physics and Measurement and Regulation Technics

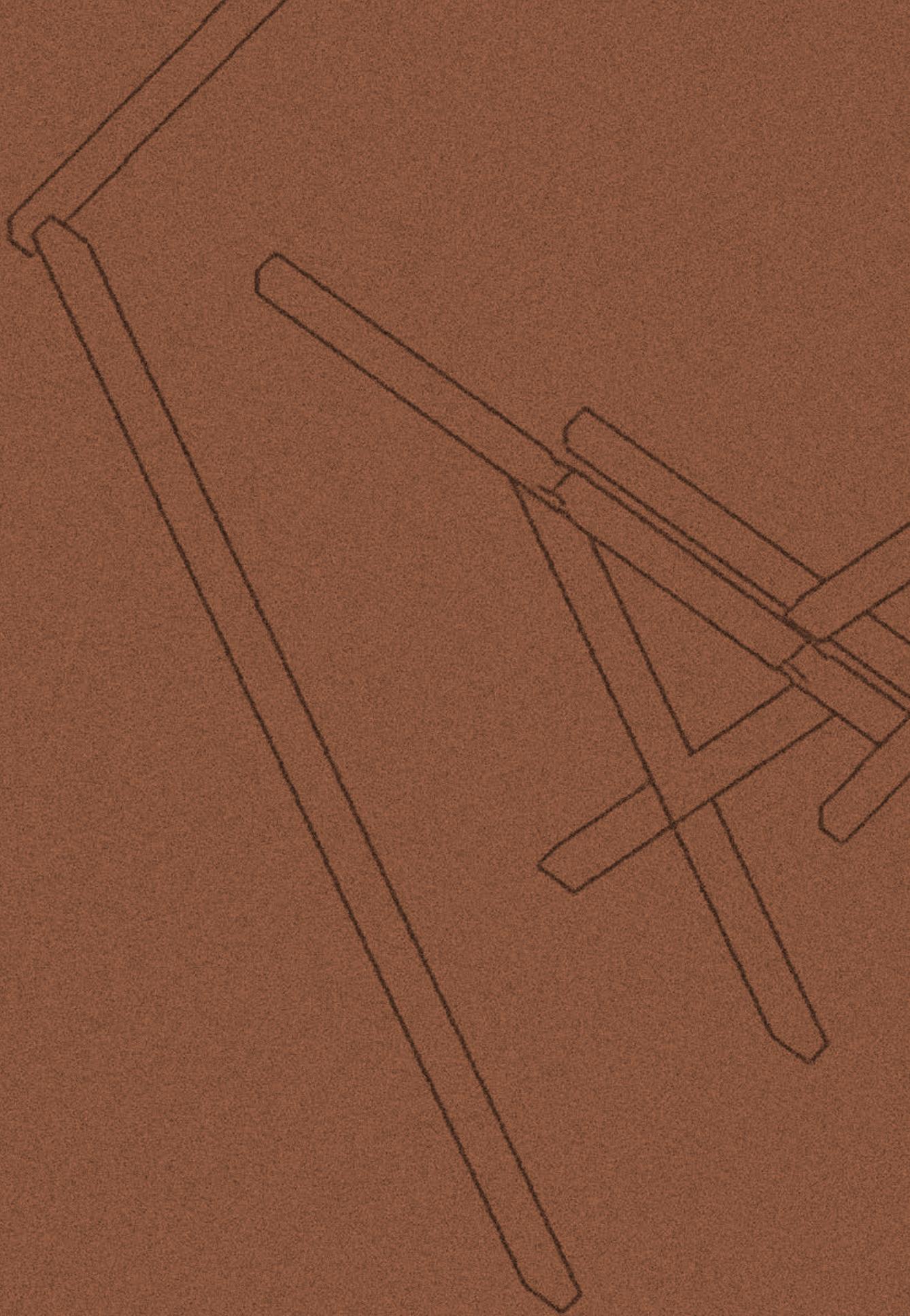
Selected projects

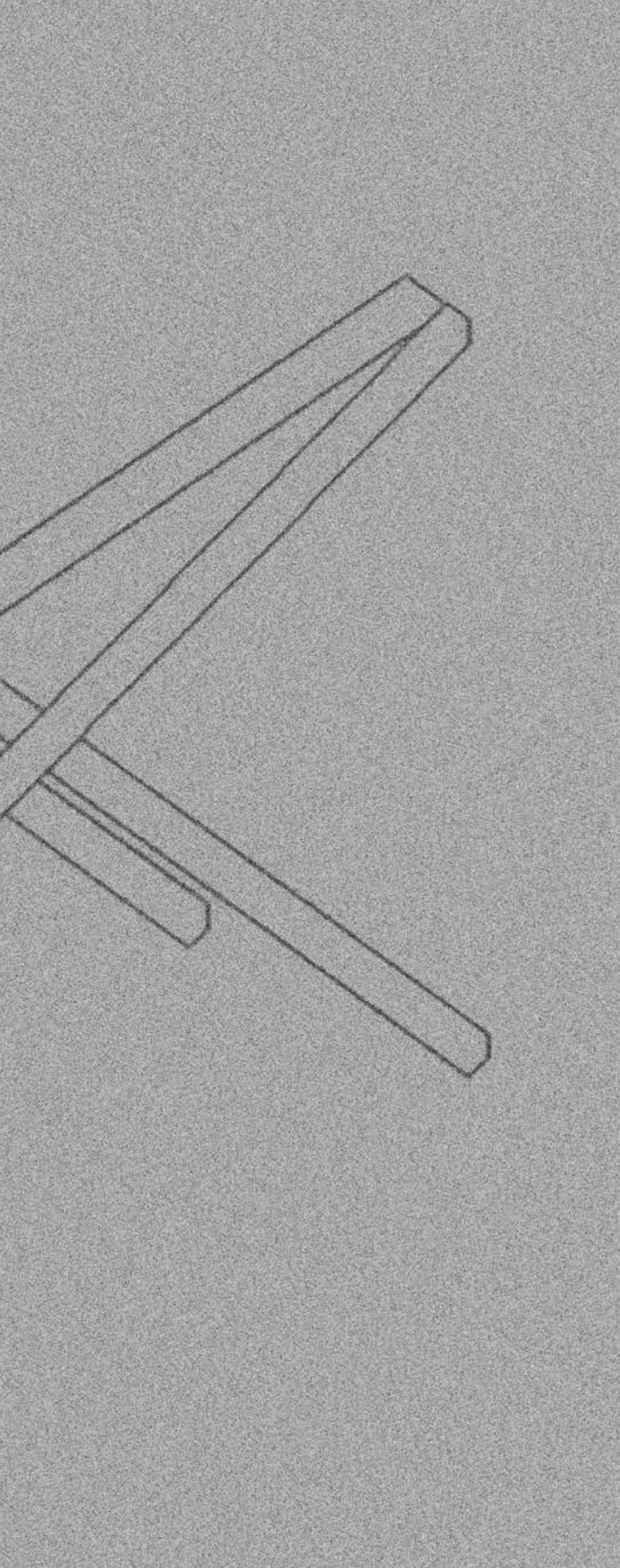
National projects and studies

- “New product development for better use of wood raw materials and improvements in wood processing exports of Serbia”, BTN 361005, led by Dr. Zdravko Popović (2007–2008)
- “Wood biomass as a resource for sustainable development of Serbia”, TR 20070, led by Dr. Gradimir Danon (2008–2010)
- “Research on climate change and its impact on the environment: monitoring of impacts, adaptation and mitigation”, III43007 – Integrated interdisciplinary research, subproject “Climate change mitigation through the use of renewable energy sources”, led by Dr. Ratko Kadović (2011–2020)

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CHAIR OF WOOD INDUSTRY MANAGEMENT AND ECONOMICS

Text drawn up by:
Dr. Branko Glavonjić, Full Professor

Brief history

The Chair of Wood Industry Management and Economics has a tradition as long as the Department of Wood Science and Technology. Together with teachers of the Chair of Primary Wood Processing, teachers of our chair are considered the founders of the Wood Industry Department at the Faculty of Forestry back in 1956. Since then, the Chair has had seven generations of teachers, teaching assistants, and associates. The first teachers of the Chair were prof. Dr. Dušan Oreščanin and prof. Dr. Lazar Vujičić. They laid the foundations of the Chair of Wood Industry Management and Economics. Prof. Dr. Dušan Oreščanin taught the courses in Economics of Wood Industry and Timber Trade, and Professor Dr. Lazar Vujičić in Production Organisation in Wood Processing Enterprises. They were later joined by prof. Dr. Božidar Perović who taught the courses in Enterprise Design and Production Preparation. With his inexhaustible energy and knowledge, he gave an immeasurable contribution to the development of the Chair of Wood Industry Management and Economics.

In the second generation, their work was continued by Prof. Dr. Ivan Aleksov and MSc Tomislav Banković. The third-generation teachers were professors Dr. Stevan Stefanović, Dr. Avdo Redžić, and Dr. Milan Nešić, while Dr. Milan Vukićević and Dr. Radovan Šuletić belonged to the fourth generation of teachers. The fifth generation of teachers and teaching assistants included professors Dr. Branko Glavonjić and MSc. Dragoljub Ivković, while Dr. Slavica Petrović, Assistant Professor joined the Chair in the sixth generation. The seventh and youngest generation includes master engineers Aleksandra Lazarević and Miljan Kalem, as Teaching Assistants.

Regarding cooperation with economic entities, the work of the Chair was significantly assisted by professional associates eng. Karlo Čerge and MSc Ratko Marković, and engineers Radomir Radojević and Stevan Celner. Technical support

CHAIR STAFF:

Teaching staff

Dr. Branko Glavonjić,
Full Professor, Head of Chair

Dr. Slavica Petrović,
Assistant Professor

MEng Aleksandra Lazarević,
Teaching Assistant

MEng Miljan Kalem,
Teaching Assistant

Professional associates and laboratory technicians

MSc Dragoljub Ivković,
Higher Education Associate

BEcon Ljiljana Pajović,
Higher Education Associate

Gordana Stijepčić,
Laboratory Technician

necessary in the work of the Chair was provided by Ljiljana Jovović and Mirjana Vučković. Today it is done by Ljiljana Pajović, Higher Education Associate, and Gordana Stijepčić, Laboratory Technician.

Teaching assistants Grad. Eng. Miloš Vulović and Grad. Eng. Slaven Živković also participated in the the teaching process at the Chair.

From its establishment until 30 September 2019, more than 300 students completed their undergraduate studies at the Chair of Wood Industry Management and Economics. Seven master's degree theses, ten specialist's theses, and 18 Master of Science theses were defended, while 19 candidates became doctors of science. The courses at doctoral studies are taught, and dissertation committees for timber trade and wood processing economics are participated by teachers from the University of Padua (Italy), the Biotechnical Faculty

of the University of Ljubljana, and the Faculty of Organisational Sciences of the University of Belgrade. The first doctoral dissertation written and defended in Serbian and English at the Faculty of Forestry with a committee whose members were from Serbia, Italy, and Slovenia belonged to this doctoral study programme.

Besides undergraduate (Bachelor) studies, the courses of this chair are taught at vocational, master's degree, specialist, and doctoral studies. In the study programme of undergraduate studies of Wood Science and Technology, the following compulsory courses belong to the Chair of Wood Industry Management and Economics: Wood Industry Economics, Production Organisation in Wood Industry, Timber and Forest Products Trade, and Production Management in Wood Industry. Besides the compulsory courses, the Chair members teach elective courses in Forest Products Marketing, Management of Furniture and Wood Products Enterprises, and Management of Woody Biomass.

Master's degree studies of the Department of Wood Science and Technology include the following courses that belong to this chair: Business Economics and Competitiveness of Wood Industry Enterprises, Foreign Trade Operations and Marketing of Wood Industry Enterprises, Production Management in Wood Industry, Lean Production in Wood Industry and Design of Wood Industry Enterprises. Doctoral studies of the elective group of Timber Trade and Wood Industry Economics include the following courses: International Timber and Forest Products Trade, Social Marketing and Export Management of Furniture and Forest Products, Management of Furniture and Forest Products Enterprises, International Furniture and Forest Products Market, Production Management in Wood Industry, Economics of Value Chains in Wood Industry, and Bioeconomy, Competitiveness and Innovation in Wood Industry.

Besides prof. Dr. Branko Glavonjića, teaching at doctoral studies is performed by Dr. Leon Oblak, Full Professor at the Biotechnical Faculty, University of Ljubljana, and prof. Dr. Danica Lečić-Cvetković from the Faculty of Organisational Sciences in Belgrade.

There are four centres at the Chair where professional activities of its members are performed. They are: Centre for Wood Industry Marketing and Economy, Timber Trade Centre, Centre for Production Systems Organisation in Wood Processing, and Centre for Wood Processing Management.

Scientific research and professional activity

Scientific research at the Chair is conducted according to the character of individual disciplines. Thus, it can be roughly divided into the research in the field of economics and marketing and the research in the field of management. The first group includes research studies of economic and marketing character, while the second group relates to organisational-managerial research studies.

Economic and market-oriented research relates to the studies of economic activities in the wood and furniture industry of Serbia, its place and role in the economy and economic development of Serbia, economic characteristics of the production in the wood and furniture industry, economic and market aspects of value chains for some categories of forest products, cost-benefit analysis, analysis of the production costs and business expenses in the wood industry, application of analytical methods of cost calculation in the production of diverse categories of forest products, roles and significance of wood and furniture industries in the concept of bioeconomy. A special segment of research in this group relates to the industrial policy of the wood and furniture industry. For the needs of the Government of the Republic of Serbia, prof. Dr. Branko Glavonjić was in charge of drawing up two strategies for the development of the wood and furniture industry of Serbia (2003–2010 and 2018–2022).

Research of timber and forest products marketing and trade includes research studies that relate to the sale and consumption of timber and forest products, international trade of timber and forest products, monitoring trends in the field of international trade in timber and forest products, monitoring and analysis of markets for timber and most significant forest products, competitiveness analysis, supply and demand for wood biofuels, international and domestic flows of wood biofuel trade, marketing of concepts and strategies of wood and furniture enterprises.

The research in the field of organisation and management deals with: organising and running of intermittent and continuous production processes in the wood and furniture industry, defining systems of production, system attributes (the organisational type of job positions, the spatial distribution of job positions, temporal operation shifts, material flow control, alternations of processes in space and time), calculation of the capacity and elements of the system (labour force and means), the effectiveness of technical systems in the wood industry, organisation and optimisation of the labour object utilisation and supplies reduction, Pareto-analyses, performance evaluation, movement study, capacity planning and management, resource and quality analysis, production management models in the wood industry, and design of production processes in the wood and furniture industry.

In the past period, the Chair has achieved intensive cooperation with the economy through the participation of teachers and associates in numerous projects. The Chair has conducted over 200 projects, studies, action plans, and expertise for the needs of economic entities, institutions, domestic and international organisations.

At the time of the industrialisation of Serbia and the former SFRY, almost all projects related to the design and construction of wood processing and furniture manufacturing enterprises were assisted by experts of this chair. Almost all factories for wood processing and furniture manufacture in Serbia, the largest factories in Macedonia, Montenegro, Bosnia and Herzegovina, as well as some factories in Croatia and Slovenia were built according to the projects designed at this chair. The majority of projects for the construction of wood processing and furniture manufacture factories were led by professors Dr. Božidar Perović and Dr. Milan Nešić.



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Business enterprises are also places where students have field classes and learn, write graduation papers and master's theses and teaching assistants and associates are trained for the teaching process of the Chair in different scientific disciplines.

An important segment of the professional work at the Chair relates to the participation of its teachers in the standardisation committees of Serbia for drafting standards for roundwood, sawn timber, and solid biofuels, as well as in the United Nations working group for the adoption of the Action Plan to stop timber trafficking.

Such numerous activities and rich experience of our teachers and associates have resulted in an exceptional number of scientific and professional papers, monographs, and other scientific publications. Since the establishment of the Chair, its teachers and associates have published over 1,300 scientific and professional papers in domestic and international journals and proceedings of domestic and international conferences. Out of that number, 15 papers were published in leading international SCI journals. Furthermore, five monographs and chapters in monographs have been written by the teachers of this chair.

1 Cover page of a project realised in the former SFRY, and led by teachers of the Chair of Wood Industry Management and Economics

2 Prof. Dr. Branko Glavonjić chairing a meeting of the UNECE Timber Committee in Geneva in 2010

Cooperation with other institutions

In the past 62 years, fruitful cooperation has been achieved with many domestic and international institutions and organisations. Regarding international organisations, cooperation with the United Nations through the participation of teachers of this chair in its bodies and agencies must be emphasised. The first such cooperation was achieved by Prof. Dr. Dušan Oreščanin, who represented SFRY in the UNECE Timber Committee for over 30 years. He was succeeded by Prof. Dr. Branko Glavonjić in 2001. Since then, Prof. Glavonjić has been a Serbian representative in the Committee. From 2008 to 2010, Prof. Dr. Branko Glavonjić chaired the UNECE Timber Committee. He was the youngest chairman of the Committee from Southeast Europe in its 73-year-long tradition.

Due to its active engagement in the Timber Committee, he was elected member of the UNECE Team of Specialists on Forest Products Markets and Marketing. Later, he became the leader of the UNECE Team of Specialists on Forest Products Statistics in Geneva.

Besides the Timber Committee, teachers of this chair have been members of FAO expert groups participated in FAO projects.

Regarding domestic institutions and organisations, we must emphasise the cooperation with the Ministry of Education, Science, and Technological Development of the Republic of Serbia and the Ministry of Economy of the Republic of Serbia through the implementation of projects and development strategies. Active cooperation has also been realised with the Institute for Standardisation of Serbia, Development Agency of Serbia, and Serbian Chamber of Commerce.

The multidisciplinary character of the disciplines studied and developed at the Chair of Wood Industry Management and Economics has initiated cooperation with other faculties in our country and abroad, among which are: Faculty

of Economics, University of Belgrade, Faculty of Organisational Sciences, University of Belgrade, Department of Land, Environment, Agriculture, and Forestry, University of Padua, Biotechnical Faculty, University of Ljubljana, Department of Marketing, Trade, and Forestry, Technical University of Zvolen, Faculty of Forestry, University of Zagreb, Faculty for Furniture and Interior Design and Technology, St. Cyril and Methodius University of Skopje and Faculty of Forestry, University of Banja Luka.

Besides these institutions and organisations, the Chair of Wood Industry Management and Economics is one of the founders of the International Association for Economics and Management in Wood Processing and Furniture Manufacturing – WoodEMA. In partnership with this association, two international conferences have been organised in Serbia. The conferences were participated by a great number of teachers and associates from Central and Southeast Europe and the United States. They addressed the current issues in the economy, organisation, management, marketing, quality and investment management in the wood and furniture industry.

Such dynamic and fruitful cooperation with domestic and international institutions and organisations has enriched members of the Chair with new knowledge and valuable experience. It has further motivated Chair staff members to keep raising the standards of their scientific and professional work. In pursuit of this mission, our staff members will keep nurturing and expanding this cooperation.



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3 Presentation by Prof. Dr. Branko Glavonjić in the meeting of the Team of Specialists on Wood Energy in Rome, 2019

4 Participants of the International Scientific Conference of WoodEMA, Belgrade, 2018

Selected projects

National projects and studies

- “Strategy for the development of the wood and furniture industry in Serbia 2018–2022”, Ministry of Economy of the Republic of Serbia and World Bank, Belgrade (2017)
- “Scientific research project: Development and application of a new visual identity of wooden floors from Serbia in order to increase their competitiveness in the European Union market”, Ministry of Science and Technological Development of the Republic of Serbia, Belgrade (2008–2010)
- “Serbia’s Spatial Development Strategy until 2018: wood processing and furniture production in the space of Serbia”, the Republic Institute for Development and the Ministry of Environment and Spatial Planning, Belgrade (2009)
- “Scientific research project: The model of construction joinery supply and demand on the European Union market in the function of creating a strategy for its export from Serbia”, Ministry of Science and Technological Development of the Republic of Serbia, Belgrade (2005–2007)
- “Scientific research project: Improving existing products and development of wood laminates and dining sets”, BTR.5.06.0523B, Ministry of Science and Technological Development of the Republic of Serbia, Belgrade (2003–2005)
- “Strategy of economic development of Serbia until 2010, subproject: Strategy for the development of the wood industry in Serbia until 2010”, Ministry of Science and Technological Development of the Republic of Serbia, Belgrade (2002)

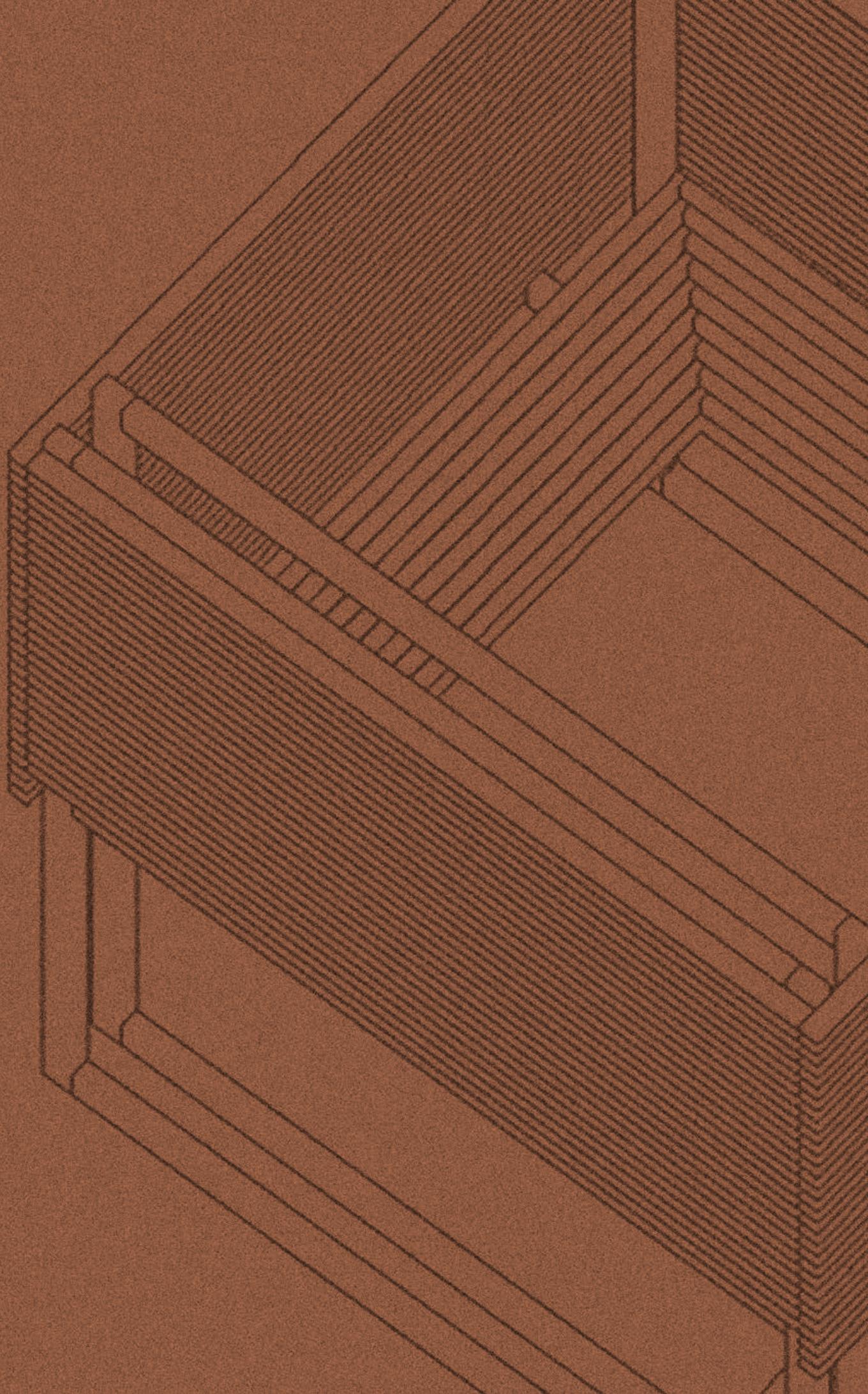
International projects

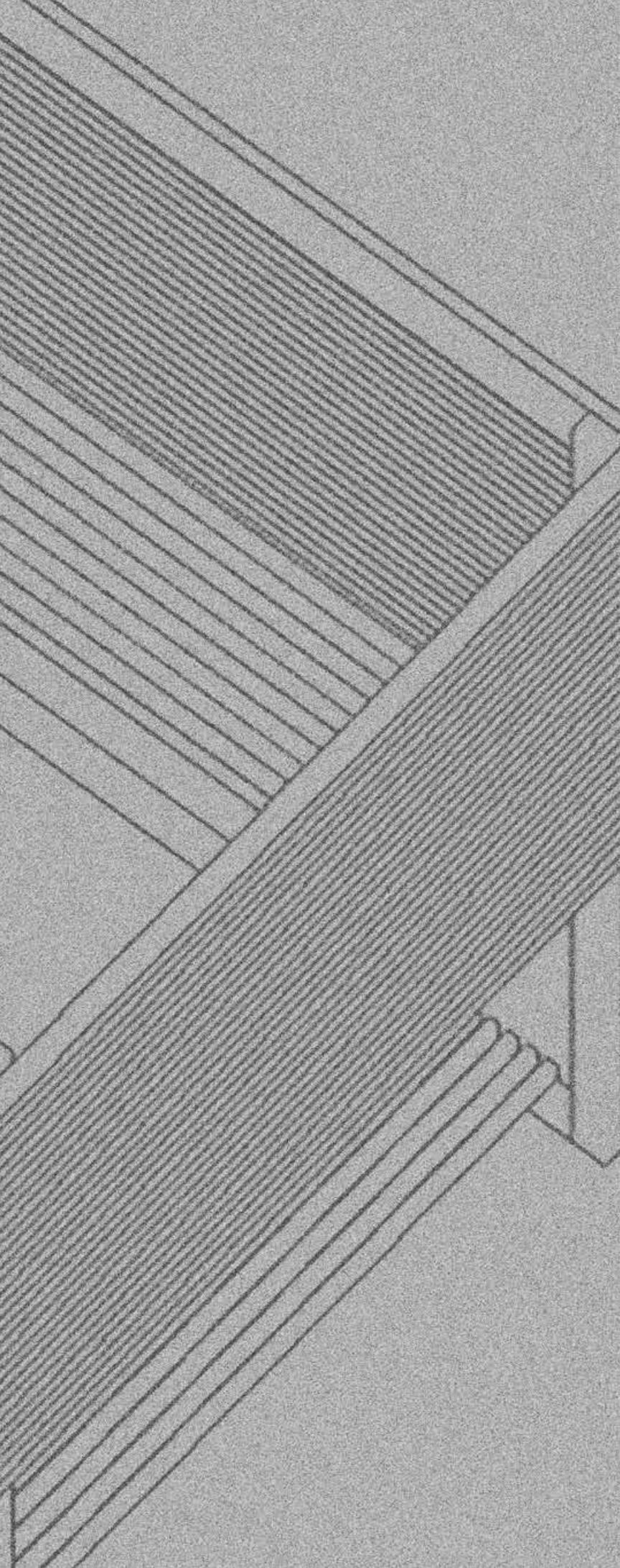
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CHAIR OF WOOD PROTECTION

Text drawn up by:
Dr. Milenko Mirić, Full Professor

Brief history

Having adopted the proposal of the Teaching-scientific Council of the Faculty of Forestry in Belgrade and the initiative and exposition of Prof. Dr. Milenko Mirić, the Council of the University of Belgrade passed a decision on the establishment of the Chair of Wood Protection on the Feast of the Cross, 27 September 2006. This decision confirmed the importance of the scientific field this discipline deals with.

The course itself was over time taught at several chairs, depending on the current organisational structure of the Faculty of Forestry. At first, it belonged to the Chair of Forest Protection of the Department of Forestry, then the Chair of Primary Wood Processing, then again the Chair of the Protection of Forests, Trees and Ornamental Plants, and again the Chair of Primary Wood Processing. The course was always taught to second-year students of undergraduate studies at the Department of Wood Industry, later known as Department of Wood Processing and Department of Technology, Management, and Design of Furniture and Wood Products, now called Department of Wood Science and Technology.

This youngest chair, unfortunately, still has only one teacher and one higher education associate who are engaged in all the courses accredited at this chair. Prof. Dr. Milenko Mirić is the teacher and Grad. Eng. Mimica Stefanović is a higher-education associate, now a third-year doctoral student in the field of wood protection. The Chair of Wood Protection has got accredited programmes of vocational, undergraduate, master's degree, and doctoral studies in the research field of the Chair.

Given the constant lack of staff with master's and Master of Science degrees and the teaching assistant title, the teaching process has been supported by several graduate student instructors selected from the best students or young graduate engineers of wood processing. Unfortunately, teaching assistant trainees who worked in the previous period did not meet

CHAIR STAFF:

Teaching staff

Dr. Milenko Mirić,
Full Professor, Head of Chair

Professional and technical associates

Grad. Eng. Mimica Stefanović,
Higher Education Associate

the expectations and of the four of them, only one got a Master of Science degree and became a teaching assistant, later an assistant professor, then an associate professor, and finally a full professor. Prof. Dr. Milenko Mirić is today the only teacher of all the courses of the Chair of Wood Protection. The situation in the field of wood protection is similar in the neighboring countries – former SFRY republics, where there are fewer than ten experts in the field. The heterogeneity of this applied scientific discipline is probably one of the reasons young people find it arduous to deal with the theory and practice of wood protection. But despite this unfavourable situation and struggle of the Chair with staff issues, both theoretical and practical teaching in the courses runs smoothly, and students acquire extensive knowledge in this field, which they prove with high results in tests and examinations. Several dozens of graduation papers and several master and Master of Science theses have been defended at the Chair. Over 300 scientific and professional papers dealing with topics related to pathogenic agents, biodegradation, and wood protection have been published.



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1 Prof. Dr. Mihailo Petrović
(1928–1998)

The teachers who previously taught Wood Protection or a part of it (regardless of the previous name or organisational affiliation of the chair) and significantly contributed to the professional education of tens of generations of students include the following eminent professors:

- Prof. Dr. Mihajlo Krstić (1913–1972) – Epixylic fungi;
- Prof. Dr. Konstantin Vasić (1915–1990) – Xylophagous insects;
- Prof. Dr. Pribislav Marinković (1925–2007) – Epixylic fungi;
- Prof. Dr. Mihailo Petrović (1928–1998) – Wood Protection;

Prof. Dr. Mihailo Petrović started work at the Faculty of Forestry on 13 November 1959, when he was appointed teaching assistant at the Department of Wood Industry, where he later taught the course in Wood Protection. Prof. Dr. Mihailo Petrović was appointed assistant professor in 1968, associate professor in 1973, and full professor in 1978.

At the Faculty of Forestry, Prof. Dr. Mihailo Petrović was regularly elected to self-governing bodies and institutions, both of the Faculty and the Institute of Wood Processing. He was the director of the Institute. He served as chairman of the Teaching-Scientific Council and the General Council of the Institute. He also served as dean of the Faculty of Forestry, delegate of the Faculty in the Working Community of Science, where he was elected vice-chairman of the Council of Biotechnical Sciences in his second mandate and chairman of the Committee of Forestry and Wood Industry.

As a young man, Prof. Dr. Mihailo Petrović took part in three youth work actions and was awarded an ORA striking badge. Later, during his teaching career, he was awarded six plaques, one certificate of appreciation, and a charter with a gold plaque of the Yugoslav Centre for Protection of Economic Equipment from Zagreb (Yugoslav Academy of Science and Art). He participated in the organisation of several professional conferences in the field of the protection of wood and

other materials. He was a member of the International Research Group on Wood Preservation (IRG/WP). He also participated in several international conferences and meetings on wood protection as a delegate of the Faculty, SITZMJ (Association of Engineers and Technicians for Material Protection of Yugoslavia) and SITJ (Association of Engineers and Technicians of Yugoslavia) in Yugoslavia, Poland, Austria, FR Germany, the former USSR, Bulgaria, etc. He was a member of the Scientific Council of Agriculture and Forestry Vocational Education of SR Serbia and the Committee for vocational exams in wood protection for technicians and engineers of the civil engineering profession. As a political and social worker, he was a member of the Executive Board of the Faculty Trade Union, secretary and member of the Secretariat of the Conference of the League of Communists of the Faculty, member of the Board of Secondary School of Civil Engineering in Belgrade, chairman of the Wood Protection Commission of SITZMS (Association of Engineers and Technicians for Material Protection of Serbia), Chairman of SITZMS, chairman of the Committee for the organisation and development of SITJ, chairman of the Personnel Committee of SITJ, chairman of the Information Committee of the 7th Congress of SITJ and member of its Organising Committee, member of the chairmanship of SITJ, SITJ delegate at the SSRNS conference, member of the chairmanship of SITZMJ, member of the publishing council of the journal "Material Protection", member of the editorial board and editor of the column "Wood Protection". He published over 75 scientific and professional papers. He wrote two coursebooks in the field of wood protection. He was a co-author of the chemical-technological manual: "Corrosion and Protection of Materials (Book 4)" which was awarded a prize of the Assembly of the City of Belgrade and the Association of Publishers of Yugoslavia. Prof. Dr. Mihailo Petrović retired on 30 September 1993. He died in Belgrade in 1998, where he was buried.



2 Prof. Dr. Milenko Mirić,
Head of the Chair of Wood
Protection

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Today, teachers and associates employed at the Chair of Wood Protection, Department of Wood Science and Technology, Faculty of Forestry, University of Belgrade are Prof. Dr. Milenko Mirić and Grad. Eng. Mimica Stefanović, Higher Education Associate. They are in charge of lectures, exercise classes, tutorials, practical lessons, tests, and exams.

Prof. Dr. Milenko Mirić was born on 5 April 1952 in Novi Sad. He finished the XIV Belgrade High School in Belgrade and graduated from the Faculty of Forestry of the University of Belgrade in 1978. He received his Master of Science degree (1983) and doctor of science degree at the Faculty of Forestry. He started work at the Faculty of Forestry, University of Belgrade on 1 September 1980, when he was appointed teaching assistant trainee in the course of Wood Protection, teaching assistant in 1983, assistant professor in 1994, associate professor in 2001 and full professor in 2005.

At the Department of Wood Science and Technology, Prof. Dr. Milenko Mirić teaches the following courses:

Vocational studies:

- Wood Protection

Undergraduate studies:

- Wood Protection

Master's degree studies:

- Entomology of Xylophagia;
- Wood Pathology – Lignicolous Fungi;
- Wood Protection;
- Protection of Interior Constructions and Wood;
- Impregnation of Wood in Tanks;
- Protection of Wooden Cultural Monuments and Collections;
- Protection of Wood Raw Material in Storage Yards

Doctoral studies:

- Wood Pathology – Lignicolous Fungi;
- Entomology of Xylophagia;
- Wood Protection

Scientific research and professional activity

Throughout his career, Prof. Dr. Milenko Mirić has established very successful and fruitful cooperation with the world's most prestigious Institute of Wood Protection, University of Hamburg (FR Germany), where he conducted most of the experimental laboratory research of his doctoral dissertation. He was mentored by the most eminent world experts in the field – Prof. Dr. Walter Liese, Prof. Dr. Olaf Schmidt, and Prof. Dr. Hubert Willeitner. Prof. Dr. Milenko Mirić did eight professional training sessions (specialisations) in this renowned scientific institution (Univerzität Hamburg – Institut für Holzbiologie und Holzschutz, Bundesforschungsanstalt für Holz und Forstwirtschaft, Leuschnerstr. 91, 2050 Hamburg 80. Deutschland) in 1983–1984, 1985, 1986, 1987, 1988, 1989, and 2007. Five of them were financed by the German side.

In 1988, Prof. Dr. Milenko Mirić donated a xylotheque of over 2,000 wood specimens from all over the world to the Department of Wood Processing. Today, it belongs to the Chair of Primary Wood Processing and presents a valuable and useful teaching aid. Prof. Dr. Mirić was given this collection as a gift from Prof. Dr. Dieter Richter, a top expert in the field of wood anatomy at the Institute of Biology and Wood Protection in Hamburg.

Prof. Dr. Milenko Mirić is a member of several national and international professional and scientific research organisations, the most important of which are SITZM of Serbia (Association of Engineers and Technicians for Material Protection of Serbia) and IRG/WP (International Research Group on Wood Preservation).

Research areas Prof. Dr. Milenko Mirić deals with include wood protection, wood biodegradation, lignicolous fungi, xylophagous insects, protection of wooden cultural monuments, protection of interior and exterior wood and wooden constructions, and protection of wood raw material in storage yards.

Prof. Dr. Milenko Mirić has published independently or with associates over 170 scientific and professional papers, both in Serbian and English, and participated in many projects funded by the Ministry of Science and Technological Development. He wrote the book WOOD PROTECTION, Technical wood pests – xylophagous insects, published by “Academic Thought” from Belgrade. He has held several on-call lectures at the universities of Sopron (Hungary) and Hamburg (Germany). Prof. Dr. Milenko Mirić speaks English and German.

Grad. Eng. Mimica Stefanović works as a higher education associate at the Chair of Wood Protection. She was born on 24 April 1977 in Leskovac. She finished primary school and wood processing secondary school in Grdelica as the best student of her generation. She graduated from the Faculty of Forestry (Wood Protection at the Department of Wood Processing) on 30 September 2005 with an average grade of 8.94 and defended her graduation paper titled “Principles of protection of wood built into structures of cultural and historical significance, art objects and ethno-collections made of wood” with the highest grade. During her final years of study, she served as a graduate student instructor for two academic years in the course of Wood Constructions. Grad. Eng. Mimica Stefanović started doctoral studies in 2016/2017 at the Faculty of Forestry, Module of Technology, Management, and Design of Furniture and Wood Products, Submodule of Wood Protection. She has passed all exams in doctoral studies with the highest grade (10) and achieved a maximum of 120 ESP points in the first two years of doctoral studies. She has co-authored seven scientific and professional papers in the field of wood biodegradation and protection.

Grad. Eng. Mimica Stefanović worked as a production preparation officer in the wood-industrial company “Our School”

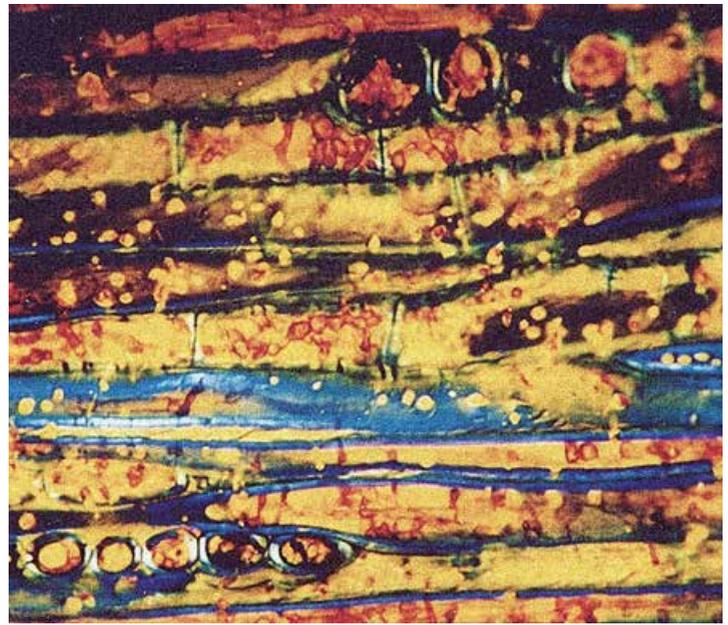


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a.d. in Obrenovac from 2008 to 2011, and then as a technical director in the same company. From 2013 to 2015, Grad. Eng. Mimica Stefanović served as teaching assistant performing exercises in the course of Wood Protection with second-year students of the Department of Technology, Management, and Design of Furniture and Wood Products. Since 15 December 2015, she has been employed as the higher education associate at the Chair of Wood Protection, the Faculty of Forestry of the University of Belgrade. She speaks German and English and has good computer skills.

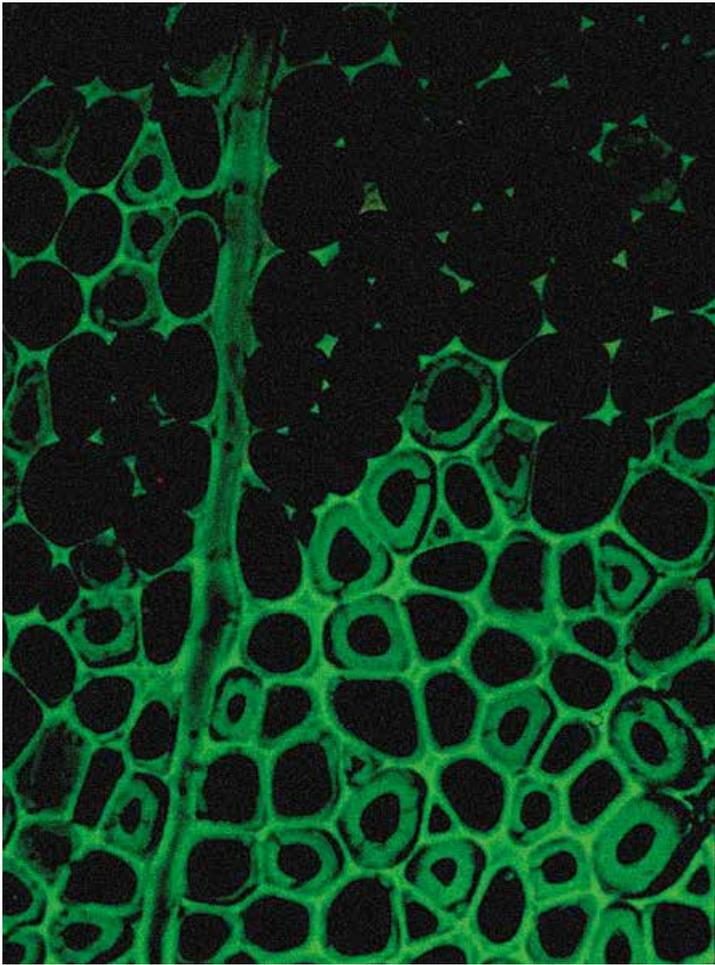


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3 Damage caused by *Hylotrupes bajulus* L. on softwood roof structures of a building

4 Carpophores of a lignicolous fungus on oakwood

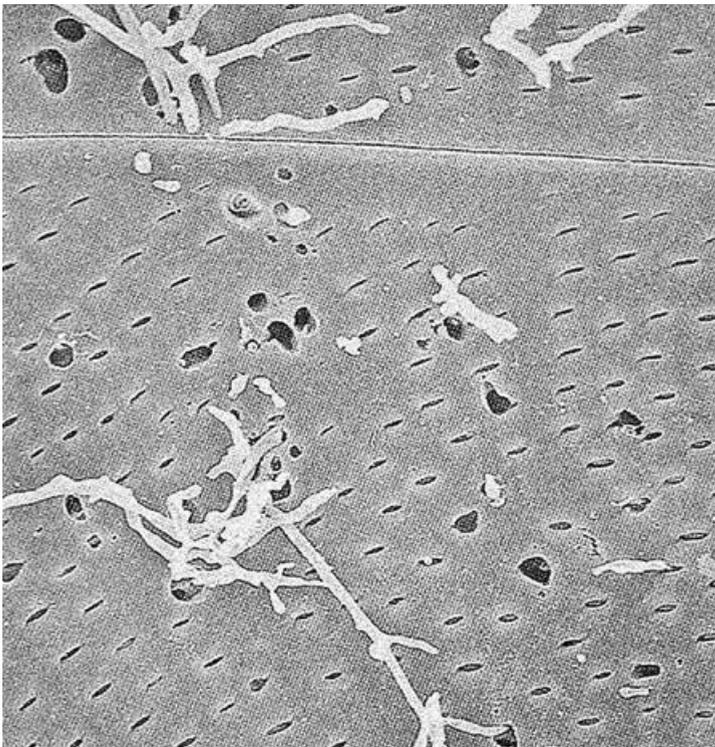
5 Decomposition of oakwood structural elements caused by a lignicolous fungus



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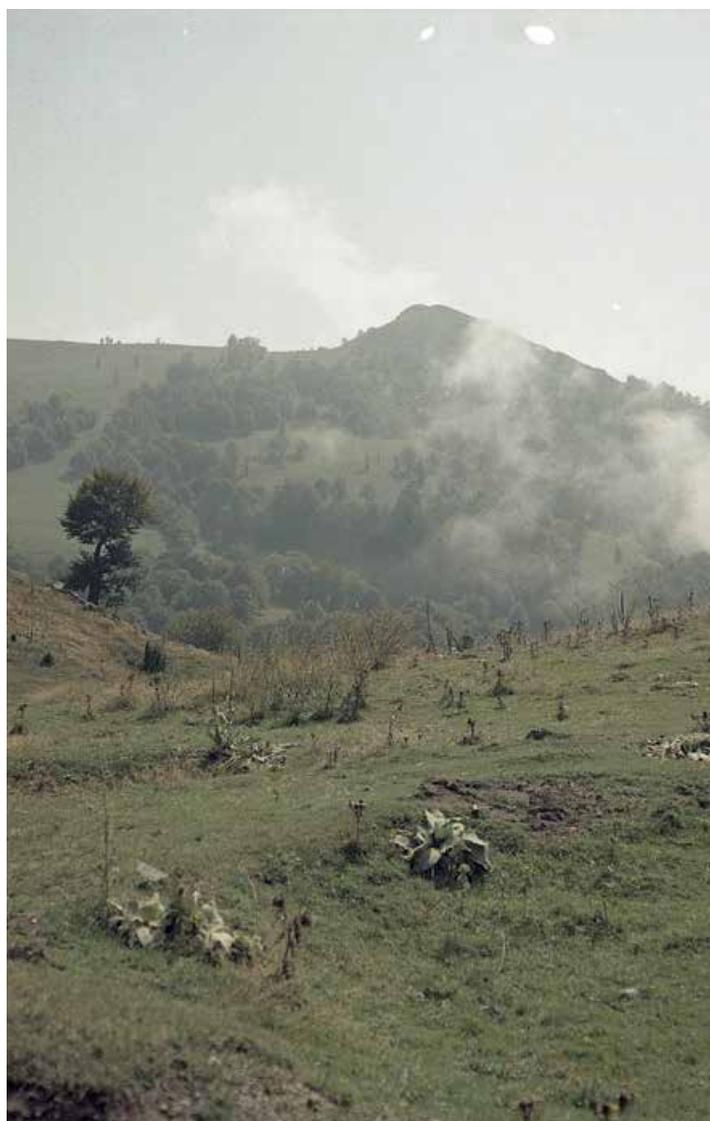
6 Various stages of decomposition of oakwood cell walls caused by a lignicolous fungus

7 Oak tracheal perforations caused by lignicolous fungal hyphae

8 Grad. Eng. Mimica Stefanović, Higher Education Associate (doctoral student)

Cooperation with other institutions

In cooperation with experts from the Institute for the Protection of Monuments of Culture of the Republic of Serbia, Prof. Dr. Milenko Mirić has participated in the rehabilitation and protection of wooden cultural monuments, such as wooden churches, icons, iconostases, and other wooden artifacts. Throughout his professional career, he has collaborated with the experts of the Conservation and Restoration Department of the National Museum of the Republic of Serbia on the rehabilitation and protection of wooden objects of cultural and historical heritage. Together with experts of the Republic Institute for the Protection of Cultural Monuments of Serbia, he has worked on the protection and reconstruction of wooden parts built into the monastery complex Visoki Dečani. He has also cooperated with the Restoration and Conservation Department of the Academy of Fine Arts of SOC to protect supports of religious panel paintings (wooden icons).

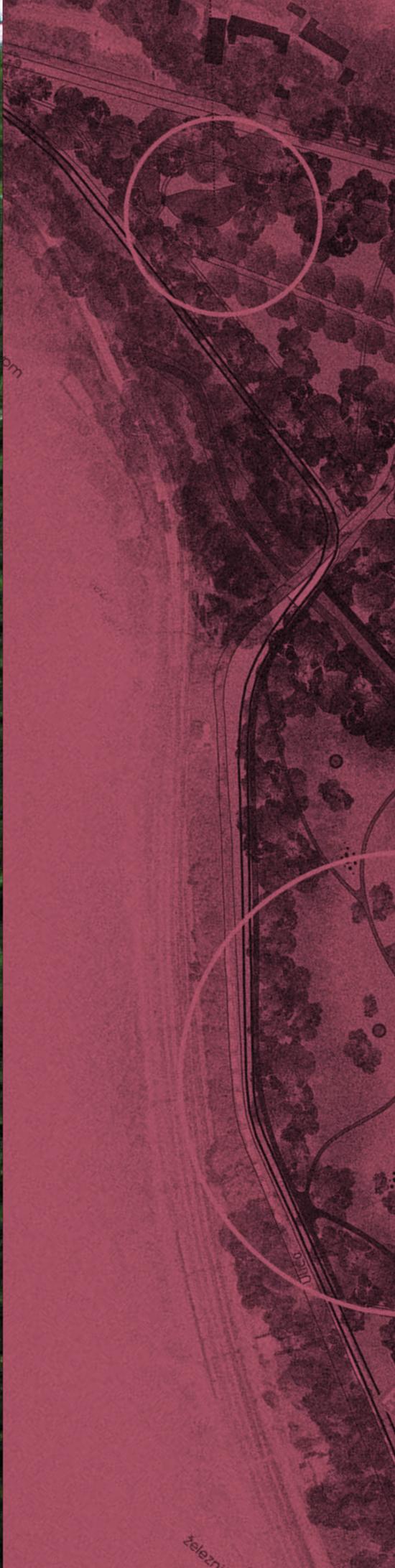


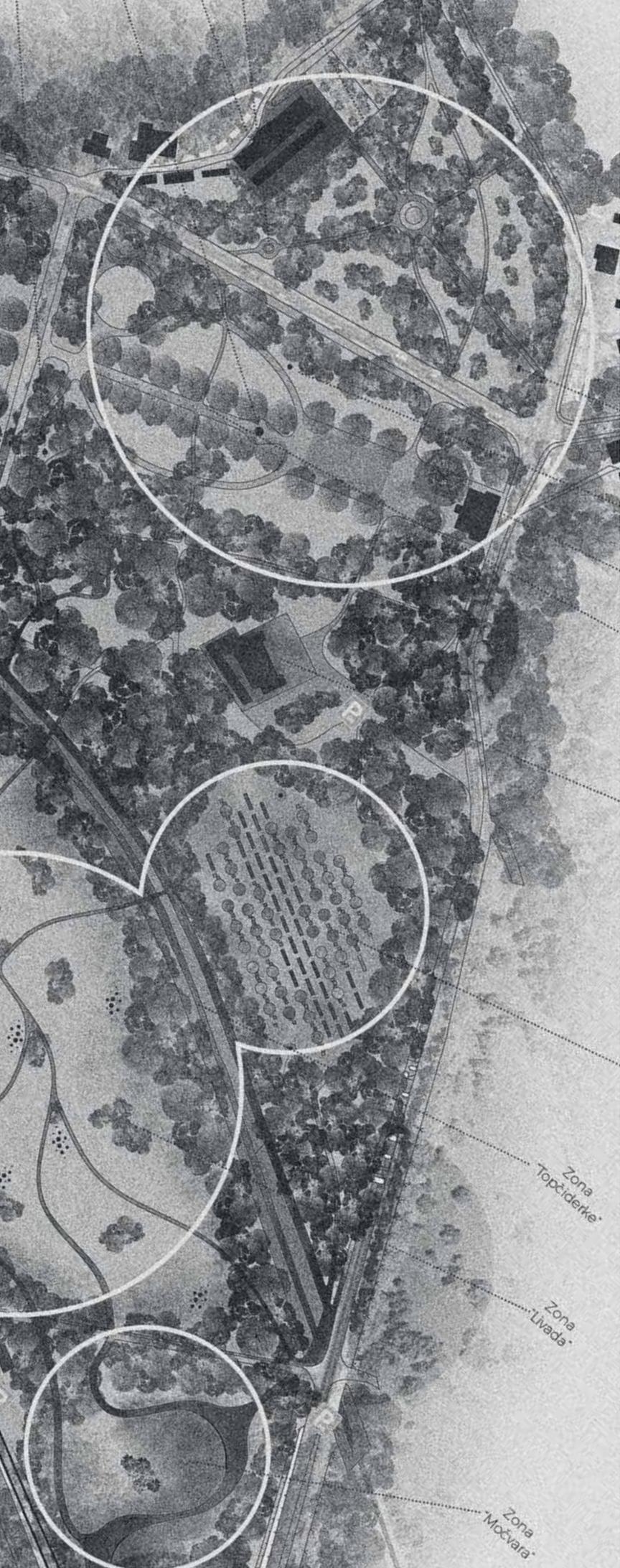
Selected projects

- “Bioökologie des amwichtigsten Holzzerstörende Pilze an Eichenholz (“Bioecology of the most important oak wood-decaying fungi”); University of Hamburg, Hamburg (1987–1989)
- “Study of climate change and its impact on the environment: impact, adaptation, and mitigation”, Ministry of Education and Science of the Republic of Serbia (2011–2019)
- “Sustainable management of the total forest potentials in the Republic of Serbia” (2011–2019)

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DEPARTMENT OF LANDSCAPE ARCHITECTURE AND HORTICULTURE

Text drawn up by:
Dr. Mirjana Ocokoljić, Full Professor

About the Department

The Department of Residential Greening (forerunner of today's Department of Landscape Architecture and Horticulture) was founded on 4 January 1960. The initiative to establish a new department came from Prof. Dr. Toma Bunuševac, Vice-Rector of the University of Belgrade. The Department was modeled on the Lomonosov Institute for City Greening and had only one chair – Chair of Greening.

The first generation of students who enrolled in the Department of Residential Greening in 1960/61 had 32 students, and the first student who graduated in 1963/64 was Grad. Eng. Slavoljub Kosorić. From its establishment until September 2019, 2,131 students graduated from the Department. Besides graduate engineers, the Department produced 41 Doctors of Science, 56 Masters of Science, 16 specialists, and 188 master engineers in the same period. To support and enhance the teaching process, our teaching staff published 26 coursebooks, 43 monographs, and 33 course packets, practice books, handbooks, and workbooks in the same period. Impressive results were produced in scientific research and professional work. Thousands of scientific and professional papers were published, and several hundred projects were conducted to meet the needs of the profession. These achievements have built up a considerable scientific and professional potential of the Department for its further growth and development. Our Department offers knowledge of natural and technical sciences necessary to understand landscape and plants. It also develops planning and design skills and engineering knowledge and techniques our students need to construct landscape architecture facilities (parks, green recreational spaces, gardens, and other created green or nature-close and natural spaces). Our students also acquire biology-related knowledge of ornamental plants, medicinal and aromatic plants, care and integrated plant protection, plant design skills, production technology of ornamental plants, plant nutrition technologies, etc.).

The curricula and study programmes have been changing over the past 59 years to suit the needs of the profession, follow the trends in scientific research, and harmonise with higher education laws and regulations. In that sense, in 2019, the Department of Landscape Architecture and Horticulture introduced the European model of study programmes based on the Bologna Process. This model offers three-level education, i.e. four-year undergraduate academic studies, one-year master's degree academic studies, and three-year doctoral studies. Study programmes whose contents are delivered through lectures, exercise classes, and other forms of teaching



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such as laboratory exercises or studio practice, field teaching, practical classes, professional practice, professional excursions, and mentorship are accredited and meet the standards of the European framework content.

From 1960 to 2019, a total of 56 teachers, teaching assistants, and associates were involved in the teaching process of the Department. Teachers and associates of the Department of Forestry, Department of Environmental Engineering in the Protection of Soil and Water Resources, the Chair of General Subjects, and other related institutions are also engaged in the teaching at the Department of Landscape Architecture and Horticulture.

The Department is proud of the first female doctor of science at the Faculty of Forestry – Prof. Dr. Emilija Vukičević, the first and only female dean in the first century of the Faculty existence – Prof. Dr. Olga Mijanović, and the first post-war landscape architect in Serbia – Prof. Stevan Milinković. In early September 2019, there were 25 teachers and associates at the Department. There were seven full professors, two associate professors, 15 assistant professors, and one teaching assistant. Teaching and professional staff is organised in the following chairs: Chair of Planning and Design in Landscape Architecture, Chair of Landscape Engineering, and Chair of Landscape Horticulture.

There are five laboratories and three centres established to support scientific research and professional engagement of the Department staff members. The Department of Landscape Architecture and Horticulture has always been focused on improving the process of academic education and the scientific field of landscape architecture and horticulture. In doing so, they have recruited qualified and competent teaching staff, applied modern approaches in education, used diverse forms of teaching and extracurricular activities realised in small groups of students, conducted research work, and developed academic values and freedoms.



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1 Members of the Department
(September, 2019)

2 Prof. Dr. Olga Mijanović
– the only female dean of the
Faculty of Forestry

3 Prof. Dr. Emilija Vukičević
– the first female doctor of science
at the Faculty of Forestry

4 Prof. Stevan Milinković
– the first post-war landscape
architect in Serbia



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5 "Urban pockets of Belgrade", student project (authors: Vesna Gvozdenov and Jovana Kovačević)

6 Practical classes in "Jevremovac" Botanical Garden

7 The best student project of the 8th Salon of Landscape Architecture (2019), first laureate of "Stevan Milinković" Awards (authors: Nikoleta Popović and Milica Petrović; mentors: Dr. Dragana Ćorović and MSc Andreja Tutundžić, (a detail))

8 Student designs showcased at the 2nd Salon of Landscape Architecture

Faculty deans of the Department

The following members of this Department served as deans of the Faculty of Forestry:

- 1977–1979, Dr. Slobodan Stilinović
- 1985–1987, Dr. Olga Mijanović

rasadnik

obelisk

spomenik
Arčibaldu
Rajsu





CHAIR OF LANDSCAPE HORTICULTURE

Text drawn up by:
Dr. Danijela Đunisijević-Bojović, Associate Professor

Brief history

The Chair was founded in the 1970s as the Chair of Ornamental Plant Production and belonged to the organisational structure of the Department of Horticulture of the Faculty of Forestry. The first-generation teachers and founders of the Chair were Prof. Dr. Olga Mijanović (1933–2017), teacher of Floriculture, and Prof. Dr. Slobodan Stilinović (1926–2002), teacher of Planting Material Production. The first head of the Chair was prof. Slobodan Stilinović. These teachers laid firm foundations of today's Chair of Landscape and Horticulture.

Prof. Dr. Slobodan Stilinović served as head of the Department of Horticulture, director of the Institute of Landscape Architecture, and dean of the Faculty from 1977 to 1979. Prof. Dr. Olga Mijanović was head of the Chair and director of the Institute of Landscape Architecture for many years. From 1985 to 1987, Dr. Olga Mijanović was dean of the Faculty of Forestry. Members of the Chair proudly remember Prof. Mijanović, who has been the only woman to serve in this position.

In the period immediately after its establishment, the following professors and associates of the Chair of Crops and Plantations taught at the Chair: Prof. Dr. Milovan Gajić and Prof. Dr. Mladen Korać, teaching the course in Botany, Prof. Dr. Aleksandar Tucović, teaching the courses in Genetics and Plant Physiology with associates, and Grad. Chem. Živanka Milin, Professional Associate of the Chair of Silviculture. Prof. Dr. Pribislav Marinković and Prof. Dr. Dragić Tomić from the Chair of Protection of Forests, Trees, and Ornamental Plants initiated scientific research and developed teaching contents in the field of ornamental plant protection. Grad. Eng. Marija Pišler-Gojnić, Senior Professional Associate, and Grad. Eng. Vela Jankov, Professional Associate, were also, in this period, actively involved in the work of the Chair. By introducing the course in Economics and Management in Landscape Architecture,

CHAIR STAFF:

Teaching staff

Dr. Matilda Đukić,
Full Professor

Dr. Dragica Obratov-Petković,
Full Professor

Dr. Milka Glavendekić,
Full Professor

Dr. Jelena Tomičević-Dubljević,
Full Professor

Dr. Vesna Golubović-Čurguz,
Associate Professor

Dr. Ivana Bjedov,
Associate Professor

Dr. Danijela Đunisijević – Bojović,
Associate Professor,
Head of Chair

Dr. Marija Marković,
Associate Professor

Dr. Dragana Skočajić,
Assistant Professor

Dr. Marija Nešić,
Assistant Professor

Professional and technical associates

Dr. Dragana Čavlović,
Research Associate

MEng Slavica Čepić,
Research Assistant

MEng Marijana Milutinović,
Research Trainee



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which was developed and taught by Dr. Miodrag Kovačević, Associate Professor, the Chair further expanded its activities. These pioneer teachers were succeeded by teachers of the narrow scientific field of Landscape Architecture and Horticulture: Prof. Dr. Mihailo Grbić, Prof. Dr. Matilda Đukić, Prof. Dr. Dragica Obratov-Petković, and Dr. Slobodan Lazarević, Assistant Professor (1943–2014).

From 1993 to 1995, MSc Srđan Radanov-Radičev was employed as a research associate at the Chair participating in scientific projects and course teaching. At the time, Grad. Eng. Agnes Đorić also participated in the work of the Chair for two school years. Ornamental Plant Pests and Ornamental Plant Diseases were taught by Prof. Dr. Ljubodrag Mihajlović and Prof. Dr. Dragan Karadžić and their associates from the Chair of Forest and Ornamental Plant Protection.

In 2002, the Chair changed its original name to the Chair of Landscape Horticulture. It was then joined by the teachers of the narrow scientific field of Protection of Forests and Ornamental Plants who made the third generation of teachers: Prof. Dr. Milka Glavendekić, Associate Professor and Dr. Tanja Milijašević (1954–2010), and since 2011, Dr. Vesna Golubović-Čurguz, Associate Professor.

The following period was marked by the recruitment of new teaching assistants, who today make up the fourth generation of teachers: Prof. Dr. Jelena Tomičević-Dubljević, Dr. Ivana Bjedov, Associate Professor, Dr. Danijela Đunisijević-Bojović, Associate Professor, and assistant professors Dr. Marija Marković, Dr. Dragana Skočajić, and Dr. Marija Nešić. The teachers of the Chair of Seed Science, Nursery Production and Afforestation, Prof. Dr. Mirjana Šijačić-Nikolić and Dr. Marina Nonić, Assistant Professor, teach classes in the elective course in Genetics with Plant Breeding of the current study programme of Landscape Architecture.



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1 Founders of the Chair of Ornamental Plant Production: Prof. Dr. Olga Mijanović and Prof. Dr. Slobodan Stilinović

2 Professors Slobodan Stilinović and Olga Mijanović with students and associates in the "Čikaš Bene" Nursery in Sombor, early 1980s

3 Students and teachers of the Chair of Landscape Horticulture: Matilda Đukić, Tanja Milijašević, Slobodan Lazarević, Dragica Obratov Petković and Mihailo Grbić in the "Topalović" Nursery with the owner of the nursery Milan Topalović



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Today, research associates with the following research titles participate in the work of the Chair: Dr. Dragana Čavlović, Research Associate, MEng Slavica Čepić, Research Associate, and MEng Marijana Milutinović, Research Trainee. From 2001 to 2003, Grad. Eng. Aleksandar Vučković served as Teaching Assistant Trainee in the Floriculture course.

Regarding the courses of doctoral studies of the narrow scientific field of Landscape Architecture and Horticulture, Dr. Srđan Bojović, Principal Research Fellow of “Siniša Stanković” Institute for Biological Research of the University of Belgrade, has been participating in the teaching process since 2008 and Dr. Milorad Veselinović, Senior Research Associate of the Institute of Forestry in Belgrade since 2014.

A significant contribution to the work of the Chair in the field of cooperation with the economy was provided by Milan Topalović, the owner of “Topalović” Nursery, Ivan Topalović, the owner of “Braća Topalović” Nursery, Mirko Sremčević and Zoran Sremčević, the owners of “Omorika” Nursery; Đura Kiš, the owner of “Kiš” Nursery; Dragan Gajić, the owner of “Lepo Polje” Nursery from Liplje near Ljig, PE “Srbijašume”, PE “Vojvodinašume”, PE “Directorate for Construction of the City of Požarevac” and Utility Company Budva Ltd, Montenegro.

Besides the undergraduate, master’s degree, and doctoral studies of the Department of Landscape Architecture and Horticulture, teachers of this chair teach courses in Plant Physiology, Ornamental Plant Pests (elective), and Ornamental Plant Disease (elective) at the Department of Forestry, and Botany and Floristic Diversity Conservation (electives) at the Department of Ecology Engineering in the Protection of Soil and Water Resources.

In the current Landscape Architecture undergraduate study programme, this chair is in charge of the following compulsory courses: Ecophysiology of Plants, Horticultural Botany,

Planting Material Production, Floriculture, Floriculture of Interiors, Designing with Plants, Landscape Vegetation, Horticultural Entomology, Ornamental Plant Diseases, and Economics and Management in Landscape Architecture. Besides the compulsory courses, classes are also held in elective courses that belong to this chair: Fundamentals of Ecology and Environmental Protection, Plant Nutrition, Integrated Plant Protection and Phytopharmacy, Diversity and Habitat Conservation, Public Participation in Landscape Architecture, and Technology of Flower Production.

4 Students of the 1979/80 generation with teachers Kosta Žujović, Mihailo Grbić, and Slobodan Lazarević – field classes in Bjelovar (former SFRY), 1982

5 Teacher Slobodan Lazarević with students – field classes, Kalemegdan, 2008

6 Students and teachers Slobodan Lazarević and Milka Glavendekić with Đuro Kiš, the owner of the “Kiš” Nursery – field classes



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7 Students and teachers Tanja Milijašević and Mihailo Grbić in the "Vasić" Nursery in Kosjerić with the nursery owner Mileta Vasić

8 Students with the teacher Vesna Golubović-Čurguz in front of the Gallery of the Natural History Museum at Kalemegdan

9 Teacher Jelena Tomičević-Dubljević with students of the Faculty of Forestry and the Faculty of Forestry and Environmental Protection, Albert Ludwigs University (Freiburg) in field classes in Tara National Park, 2006

10 Teachers of the Chair of Landscape Horticulture (in the lobby of the Faculty of Forestry in front of the art installation by Mirjana Odić, September 2019)



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11 Teachers and associates of the Chair of Landscape Horticulture (the large terrace of the Faculty of Faculty, September 2019)

12 Students and teachers in field classes in the "Kiš" Nursery with the owner of the nursery Đuro Kiš

13 Students of the 2002/03 generation with teachers and associates of the Chair of Landscape Horticulture in field classes (Goč, 2004)

14 Teachers, associates, and students of landscape architecture on an excursion to Italy (San Marino, 2004).

Scientific research and professional activity

Scientific research is conducted through scientific projects of the narrow scientific fields of the Chair. Given the character, scientific research can be divided into the research in the field of biology and plant ecology, production technology and integrated protection of ornamental plants, and management of landscapes and protected natural resources.

Regarding plant biology and ecology, the most extensive research relates to invasive plants, whereby the greatest attention is paid to botanical and phytosociological research. The research deals with the potential of vegetative and generative reproduction of invasive species, ecophysiological strategies of invasive plants in competition for nutrients, interactions of invasive plants and soil, and their effects on indigenous floristic diversity of habitats. A part of this research is focused on the time of fruiting and seed dispersal, as well as seed abundance and viability of invasive species of trees, shrubs, and creepers. The emphasis is on the regulation of seed germination and dispersion of these species in urban biotopes and breaking down barriers in the fragmented urban landscape. Mechanisms of seed dormancy are also investigated because they are a key factor in the control of their spread. Testing of seed vitality and investigations of the impact of environmental factors on germination are performed under laboratory conditions. This testing forms the basis for the evaluation of certain regenerative mechanisms of endangered habitats.

Research into the technology of plant production relates to the optimisation of ornamental taxa propagation. The effects of growth regulators on rooting cuttings and seed germination are examined. Research is performed using classical methods of vegetative and generative propagation and micropropagation. Besides the research relating to the efficient production of ornamental crops, testing of the conditions necessary for the optimum reproduction of endangered and endemic plant

taxa is performed. In the last two decades, special attention has been given to pests and diseases at all stages of development and technologies of integrated protection of ornamental plants, from the production processes in nurseries and greenhouses to plantations, tree lines, or parks. Besides, the distribution and ecology of alien and invasive insects are examined. The spread of scientific results is encouraged through seminars and appropriate training courses organised for citizens as part of domestic and international projects since 2004. Types of mycorrhizal associations on woody species and their use to improve the environmental potential of degraded terrain are also given a special focus.

Research in the field of landscape management and nature protection is focused on the issues relating to all types of landscapes, from urban landscapes to protected natural areas. Full attention is paid to the management of protected natural areas and the importance of local community support. Besides, research is conducted in urban forests, park-forests, parks, and other green spaces of large cities.

Today, there are three laboratories at the Chair whose resources are used for the realisation of teaching and scientific research. The Seed Laboratory (room 56) was founded in 1975 to carry out seed quality testing of ornamental and forest species of trees, shrubs, and herbaceous plants. It is equipped with standard equipment for this type of testing. Besides the germination capacity, it performs testing of other seed quality indicators: purity, absolute mass, and moisture content. The Laboratory also has a woody plant seed collection and hydroponics equipment.

The Laboratory for Plant Tissue Culture was established in 1987, first within the Seed Laboratory, and since 2003, it has been equipped with appropriate facilities, including a chamber for the growth and acclimatisation of plants (room 75).



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Pioneering steps in the application of plant tissue culture to advance the technology of the production of planting material were made by professors Grbić and Stilinović. After several study visits to tissue culture laboratories of different foreign universities, Prof. Grbić procured the necessary equipment for the Laboratory. A set of sterile techniques for the vegetative propagation and cultivation of plants, plant organs, tissues, and cells in the nutrient medium are used in the Laboratory. The Laboratory is also equipped to perform experimental hydroponic plant growing. A large number of graduation papers, master's degree theses, and doctoral dissertations have been prepared in the Laboratory.

The Laboratory for Chemotaxonomy (room 116a) is a new laboratory established in 2016. It is equipped with the most advanced instrument for bioanalytical chemistry – High-Performance Liquid Chromatography (HPLC). HPLC methods used to determine the natural antioxidants, organic acids, and phenolic compounds in plants are currently being developed in the Laboratory.

The Centre for Ornamental Plant Production was established in 2008. It coordinates the production of planting material of ornamental trees, shrubs, and flower crops in the greenhouse and nursery of the Faculty of Forestry.

Scientific research within the project “Ecology, monitoring, and control of invasive plants in Belgrade biotopes”, led by Prof. Dr. Mihailo Grbić, and the current project “Ornamental and invasive plants in the conditions of climate change – impact and adaptation”, led by Prof. Dr. Dragica Obratov-Petković, as well as participation in international projects, have resulted in an outstanding number of scientific and professional papers, monographs, and other scientific and research publications. Since its establishment, teachers and associates of this chair have published a great number of scientific and professional

papers in national and international journals and proceedings of national and international conferences. More than 50 papers have been published in SCI journals, 15 of which in leading journals and journals of exceptional value. Our teachers are authors or editors of more than ten international and national monographs and monograph chapters.

15 Students and teachers in the laboratories of the Chair

Cooperation with other institutions

Since its establishment, the Chair has achieved intensive cooperation with a lot of national and international institutions and organisations. Regarding international organisations, we can stress its cooperation with the United Nations through the participation of our teachers in its bodies. Prof. Dr. Slobodan Stilinović was a member of the Yugoslav delegations in the UN Forestry Committee from 1976 to 1983. He also took part in the United Nations Conference on Desertification in Nairobi. Prof. Dr. Olga Mijanović took part in several European Union sessions for the trade and market of flowers as a representative of Yugoslavia.

Prof. Dr. Milka Glavendekić has been the Serbian representative in the International Organisation for Biological Control – East Palearctic Regional Section (IOBCEPRS) since 2007. She served as vice-president from 2009 to 2017, and since 2017, she has been a member of the IOBC-EPRS Council. Nominated by the Ministry of Agriculture, Forestry, and Water Management, Plant Protection Administration, Prof. Dr. Milka Glavendekić has also represented the Republic of Serbia in the European and Mediterranean Plant Protection Organisation (EPPO) since 2013. The professors of the Chair have been the holders of prestigious scholarships. Prof. Dr. Mihailo Grbić was granted study visits to the Experimental Station for Arboriculture in Boskop and the Institute of Forestry and Landscape Architecture in Wageningen by the Government of the Netherlands. A DAAD scholarship of the German Government was awarded to Prof. Dr. Milka Glavendekić for a study visit to Fakultät für Biologie der Julius-Maximilians-Universität Würzburg and Forstfakultät der Ludwig-Maximilians-Universität München. Prof. Dr. Jelena Tomičević-Dubljević earned the same scholarship for a study visit to the University of Landscape Management of the University in Freiburg. She was also a scholar of the Austrian Government (OEAD)-CEEPUS at the University of Natural Resources and Applied Science in Vienna.

The teachers of the Chair have made a significant contribution towards the establishment of professional associations – Association for Landscape Horticulture of Serbia and Association of Landscape Architects of Serbia. The Association for Landscape Horticulture of Serbia – UPHS was founded on 16 September 2004 with the aim to promote and protect the status of landscape architecture and horticulture as a profession in Serbia. Besides the representatives of professional manufacturers of ornamental plants, the founders of this association were professors of the Chair of Landscape Horticulture: Prof. Dr. Mihailo Grbić, as the first president of the Association, Prof. Dr. Milka Glavendekić, president in the period from 2008 to 2018, Dr. Tanja Milijašević, and Dr. Dragana Skočajić, the current president of UPHS. In collaboration with the Faculty of Forestry, the Association has been successfully organising the Seminar of Landscape Horticulture of Serbia for more than 15 successive years, where scientific and practical knowledge and experiences in the field of landscape horticulture are exchanged every year. As a member of the European Nurserystock Association (ENA), in cooperation with international organisations of landscape horticulture and local associations of related professions, UPHS actively cooperates with staff members of the Chair to improve the education and exchange the most current information in the field.

Within the master's and doctoral studies, successful cooperation has been achieved with colleagues from several institutions: Institute for Biological Research "Siniša Stanković" of the Faculty of Biology, Institute for Multidisciplinary Research of the University of Belgrade, Department of Biology and Ecology of the Faculty of Sciences of the University of Novi Sad, Institute for Nature Conservation of Serbia, PE "Tara" National Park, International Union for Conservation of Nature: Eastern Europe and Central Asia Regional Office (IUCN), and Adria World Wildlife Fund (WWF Adria). The quality of the graduation papers produced at the Chair of Landscape Horticulture is indisputable and proved by the awards of the Belgrade Chamber of Commerce for the best graduation paper won by six students in the period from 2009 to 2015.

Of domestic institutions and organisations, the cooperation with the Ministry of Education, Science, and Technology Development of the Republic of Serbia, the Ministry of Agriculture, Forestry, and Water Management, and the Ministry of Environmental Protection of the Republic of Serbia must be stressed. It was achieved through the realisation of scientific and professional projects and continuing education seminars.

Selected projects

National projects and studies

- “Ecology, monitoring, and control of invasive plants in the biotopes of Belgrade”, Ministry of Education and Science of the Republic of Serbia, project holder: Faculty of Forestry, University of Belgrade, led by Prof. Dr. Mihailo Grbić (2009–2012)
- “Production of woody species suitable for the use in altered climatic conditions, endangered and degraded ecosystems”, Forest Directorate of the Ministry of Agriculture, Trade, Forestry and Water Management of the Republic of Serbia, project holder: Faculty of Forestry, University of Belgrade, led by Prof. Dr. Matilda Đukić (2012–2013)
- “Monitoring diversity of invasive plants in urban forests of Belgrade”, Forest Directorate of the Ministry of Agriculture, Trade, Forestry, and Water Management of the Republic of Serbia, project holder: Faculty of Forestry, University of Belgrade, led by Prof. Dr. Dragica Obratov-Petković (2012–2013)
- “Research on climate change and its impact on the environment – monitoring the impact, adaptation, and mitigation”, Project III (43007), led by Prof. Dr. Ratko Kadović, subproject 12: Decorative and invasive plants in climate change conditions – impact and adaptation, Ministry of Education and Science of the Republic of Serbia, project holder: Faculty of Forestry, University of Belgrade, subproject led by Prof. Dr. Dragica Obratov-Petković (2011 – ongoing)

International projects

- “COST FP1002: Pathway evaluation and pest risk management in transport (PERMIT)”, European Cooperation in Science and Technology, led by Dr. Hugh Evans, Forest Research – Forestry Commission UK, member of the Steering Committee – Dr. Milka Glavendekić (2010–2014)
- “COST FP1204: Green infrastructure approach: linking environmental with social aspects in studying and managing urban forests”, European Cooperation in Science and Technology, led by Dr. Carlo Calfapietra, Italy, holder of the project – CNR-IBAF, Italy, member of the Steering Committee – Dr. Jelena Tomićević- Dubljević (2013–2017)
- “COST Action FP1401: A global network of nurseries as early warning system against alien tree pests (Global Warning)”, led by Dr. Rene Eshen, CABI, Switzerland, project holder – CABI, Switzerland, member of the Steering Committee – Dr. Milka Glavendekić (2014–2018)
- “COST Action CA17122: Increasing understanding of alien species through citizen science (ALIEN-CSI)”, European Cooperation in Science and Technology, Member of the Steering Committee – Dr. Milka Glavendekić (2018 to date)
- “COST CA17133: Implementing nature-based solutions for creating a resourceful circular city”, led by Dr. Guenter Langergraber, BOKU, Austria, project holder – BOKU, Austria, member of the Steering Committee – Dr. Danijela Đunisijević-Bojović (2018 to date)

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CHAIR OF LANDSCAPE ENGINEERING

Text drawn up by:
Dr. Nadežda Stojanović, Assistant Professor

Brief history

The Chair of Landscape Engineering was founded in 1960 by Prof. Dr. Toma Bunuševac, Vice-Rector of the University of Belgrade, following the example of the organisational structure of Lomonosov Institute for City Greening. The Chair was then called the Chair of Residential Greening and it was the only Chair of the Department of the same name until 1966. In 1975/76, the Chair of Residential Greening changed its name into the Chair of Establishment and Maintenance of Green Spaces, and in 2002, with the development of new scientific disciplines, it got a broader name – Chair of Landscape Engineering. Since the establishment, this chair has had five generations of teachers, teaching assistants, and associates.

The first-generation teachers were engineers in the field of forestry: Prof. Dr. Toma Bunuševac (Park Landscaping), Prof. Dr. Vera Avdalović (Pedology), and Prof. Dr. Emilija Vukićević (Decorative Dendrology), as well as MSc Kosta Žujović.

The foundations of today's Chair of Landscape Engineering were laid by second-generation teachers and engineers of landscape architecture Prof. Dr. Nebojša Anastasijević and Dr. Vesna Anastasijević, Associate Professor. Professor Dr. Nebojša Anastasijević taught the following courses: Establishment and Maintenance of Green Spaces, Decorative Dendrology, Establishment and Maintenance of Lawns, Ecological Engineering in Landscape Architecture, Landscape Engineering Technics, Management of Urban Green Spaces, and Ecology and Functionality of Urban Greenery. Dr. Vesna Anastasijević taught Pedology, Environmental Protection, Urban Ecology, Special-purpose Green Spaces, Reconstruction of Green Spaces, and Recultivation of Degraded Soil in Landscape Architecture. With their inexhaustible energy and vast scientific and professional knowledge, they gave an immeasurable contribution to the development of the Chair of Landscape Engineering and Department of Landscape Architecture and Horticulture.

CHAIR STAFF:

Teaching staff

Dr. Nenad Stavretović,
Full Professor

Dr. Mirjana Ocokoljić,
Full Professor

Dr. Nadežda Stojanović,
Assistant Professor, Head of Chair

Dr. Đurđa Petrov,
Assistant Professor

Dr. Jovana Petrović,
Assistant Professor

MEng Aleksandar Lisica,
Teaching Assistant

Higher Education Associates

MEng Mirjana Tešić,
Professional Associate

The third-generation teachers of the Chair of Landscape Engineering are Prof. Dr. Nenad Stavretović and Prof. Dr. Mirjana Ocokoljić, followed by Dr. Nadežda Stojanović, Assistant Professor, Dr. Đurđa Petrov, Assistant Professor, Dr. Jovana Petrović, Assistant Professor, and Master Engineer Mirjana Tešić, Professional Associate in the fourth generation. The Chair was joined by MEng Aleksandar Lisica, Teaching Assistant, in the fifth and youngest generation.

The teaching process at the Chair of Landscape Engineering was at some point assisted by Prof. Dr. Jelena Ninić-Todorović, MSc Milanka Ojdanić, Dr. Filip Đakonović, and Dr. Danijela Purić-Mladenović.

The Chair of Landscape Engineering has also hired teachers from other faculties of the University of Belgrade, University of Novi Sad, and the Institute of Forestry as teachers and members of master's thesis and doctoral dissertation defense committees. The first doctoral dissertation in the field of landscape architecture and horticulture was defended at this chair.



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The undergraduate study programme of the Department of Landscape Architecture and Horticulture includes the following compulsory courses that belong to this chair: Pedology, Urban Ecology, Decorative Dendrology, Establishment and Maintenance of Lawns, and Establishment and Maintenance of Green Spaces. Besides compulsory courses, there are elective courses that belong to this chair: Landscape Engineering Technics, Ecological Engineering in Landscape Architecture, Grass Carpet Production, Special-purpose Green Spaces, and Reconstruction of Green Spaces. Furthermore, the Chair staff teach in both master's degree and doctoral studies. The courses in the Landscape Engineering sub-module of the master's degree study programme of Landscape Architecture belonging to this chair are Management of Urban Green Spaces, Work Execution Organisation in Landscape Engineering, Ornamental Cultivars of Woody Plants, and Recultivation of Degraded Soil in Landscape Architecture. The doctoral study programme of Landscape Architecture includes the following courses of this chair: Ecology and Functionality of Urban Greenery, Sports and Recreational Areas, and Project Management in Landscape Architecture.

The Chair of Landscape Engineering has the Centre for Sports and Recreational Facilities and the Laboratory for Landscape Engineering. The Head of the Centre and the Laboratory is Prof. Dr. Nenad Stavretović.



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1 Teaching in the course in Establishment and Maintenance of Green Spaces – Class topic: Establishment of street greenery in the centre of Belgrade, Prof. Dr. Nebojša Anastasijević with students

2 Field classes in Establishment and Maintenance of Green Spaces, Prof. Dr. Nebojša Anastasijević, Dr. Nadežda Stojanović and MEng Mirjana Tešić with students

Scientific research and professional activity

Scientific research and professional activity of the Chair of Landscape Engineering are performed within several scientific disciplines of the narrow scientific field of Landscape Architecture and Horticulture, of which the most notable are research studies in the thematic fields of decorative dendrology, establishment and maintenance of green spaces, establishment and maintenance of lawns, ecological engineering and recultivation of degraded spaces, pedology and urban ecology, reconstruction of green spaces, sports and recreational facilities, etc.

The field of decorative dendrology deals with ecophysiological, biological, and morphological characteristics of autochthonous and allochthonous trees, shrubs, semi-shrubs, and climbers of Pinophyta and Magnoliophyta subsections. There are also research studies focused on decorative, morphological, and biological characteristics of ornamental taxa of woody plants and their adaptability in urban ecosystems (extreme temperature tolerance, drought tolerance, wind tolerance, air pollution tolerance, etc.).

The research in the thematic field of the establishment and maintenance of green spaces is focused on ecological, historical, technological, and engineering principles of the establishment and maintenance of green spaces. These research studies address the importance, functions, techniques, and technology of establishment and forms and approaches to maintaining urban green spaces and their surroundings. The greatest scientific progress in this field has been achieved in the research of environmental, sanitary, and engineering functions of urban green spaces, especially the research of the impacts of green spaces on the factors of the urban environment. A valuable contribution has also been made to the development of the green city concept, the basics of the urban ecology, the importance and function of urban greenery in the process of climate change adaptation in cities, methods of the establishment

of the system of urban green spaces and its role in the ecosystem approach to urban planning and management.

In the thematic field related to the reconstruction of green spaces, significant progress has been achieved in the functional restoration of ancient and historic green spaces, with representative trees as the key plant material. Efforts have been made to develop methods to be used in the inventory and valorisation of the quality and functionality of ancient trees and identification of problems they have, applying appropriate arboricultural knowledge and skills.

The research topics in the thematic field of the establishment and maintenance of lawns include the principles and processes of raising and maintaining various types of grass surfaces, visual and functional characteristics of lawns, biological, morphological, and anatomical features of lawn grass species, effects of the habitat type and conditions on their growth and development, the quantity and quality of grass seeds for the establishment of good-quality lawns, the presence and properties of weed in lawns, as well as grassland management techniques in urban, suburban, and rural areas. Significant results in this field have been achieved in the research of modern technologies of the production, establishment, and maintenance of ornamental, sports, park, and erosion control grass carpets and covers, as well as risk and market needs analyses in their production and establishment. Substantial progress has been made in the research of the establishment, landscaping, maintenance, and management of lawns of sports fields and recreational areas.

In the thematic field of the recultivation of degraded areas, ecological restoration of degraded landscapes has been investigated using different plant species as the main tools of environmental engineering and restoration ecology. A notable scientific contribution has been achieved in the field of reclamation of degraded soil unsuitable for the growth of plants,



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effects of soil pollution on the living world, protection of the soil against pollution, restoration of degraded and altered soils in urban areas, suburban industrial zones, polluted areas within factory complexes, traffic networks, abandoned city areas, reclamation of contaminated soil, i.e. soil regenerative technology, and land reclamation in open-pit mines, mines, tailings, ash dumps, landfills, etc.

In the field of pedology, scientific research is focused on physical, chemical, and biological characteristics of the soil. Significant scientific progress has been achieved in the research of specific soil characteristics in the changing conditions of urban settings and areas exposed to human impact, as well as research into the genesis and characteristics urban soil as a specific type of soil.

The research related to the management of urban green spaces refers to the procedures and strategies of managing the urban system of green spaces, with the knowledge of criteria, issues, goals, laws, regulations, norms, standards, as well as the role and participation of the public and reward and penalty policies in the urban green space management process. In this area, the cooperation with the Institute of Urbanism of Belgrade, City Secretariat for Environmental Protection, and PUC Greenery Belgrade has encouraged the research and development of the electronic GIS Cadastre of urban green spaces.

In the past period, the Chair of Landscape Engineering has achieved significant cooperation with the economy, various state institutions, and domestic and international organisations. Teachers and associates of this chair have participated in several scientific and professional projects, studies, expertise, investigations, etc. Field classes and the preparation of graduation papers and master's degree theses at the Chair of Landscape Engineering are performed in intensive cooperation with many state and private enterprises.



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3 Teaching the course in Establishment and Maintenance of Green Spaces – Class Topic: *Construction of underground garages in Pioneer Park.* Prof. Dr. Nebojša Anastasijević, Dr. Nadežda Stojanović, MEng Mirjana Tešić and Saša Matić, Teaching Assistant, with students

4 Teaching the course in Establishment and Maintenance of Green Spaces – Class Topic: *Reconstruction of Tašmajdan Park.* Prof. Dr. Nebojša Anastasijević, Dr. Nadežda Stojanović, and MEng Mirjana Tešić with students

5 Student workshop in the course of *Special-purpose Green Spaces* at Mixer Festival 2014 in Belgrade, led by MEng Mirjana Tešić



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Our teachers have been actively engaged in organisational and scientific committees of international conferences, national conferences with international participation, and national conferences. Such active engagement of our teachers and associates has resulted in numerous scientific and professional papers, several monographs, and other scientific publications. Since its establishment, teachers and associates of the Chair of Landscape Engineering have published over 500 scientific and professional papers in domestic and international journals and proceedings of domestic and international conferences. Of that number, 34 papers have been published in SCI journals.

Two doctoral dissertations written at the Chair of Landscape Engineering (in 2003 and 2006) have received Belgrade Chambers of Commerce awards for the best doctoral dissertations.



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6 Fourth-year students of undergraduate studies in the canyon of the Boljetinjska River in the field classes held by Prof. Dr. Nenad Stavretović and Dr. Jovana Petrović, Assistant Professor

7 Professional practice. Students and teachers (Prof. Dr. Nenad Stavretović and Dr. Jovana Petrović, Assistant Professor) visiting the Vratna Monastery

8 Students visiting the "Lisina" Waterfall and Protected Area as part of the professional practice held by Prof. Dr. Nenad Stavretović and Dr. Jovana Petrović, Assistant Professor



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9 Students and teachers of the Chair of Landscape Engineering visiting "Đerdap" National Park

10 Professional practice training in Debeli Lug Teaching Base, a group photograph of students and teachers with the employees of the Faculty Teaching Base

11 Students and teachers of the Chair of Landscape Engineering visiting the Majdanpek Mine

12 Students and teachers visiting Rajačke Pivnice, a site nominated to be added to the UNESCO World Cultural Heritage List, a photo with the host Milan Karapandža

Cooperation with other institutions

For more than sixty years, the Chair of Landscape Engineering has been cooperating with many international and domestic institutions and organisations.

Within the framework of international cooperation, the engagement of Prof. Dr. Nenad Stavretović must be emphasised. Serving as Director of the Institute for Nature Conservation of Serbia (2008–2013), he represented Serbia at international conferences on the protection of natural values such as UNESCO, IUCN, Green Belt, and others. He helped renew the membership of Serbia in the Europarc Federation and was one of the coordinators of the first conference of the Europarc Federation in Eastern Europe. Thanks to Prof. Dr. Stavretović, the Institute for Nature Conservation of Serbia was engaged in the work of the European Nature Conservation Agency (ENCA). He also secured the cooperation of the Institute for Nature Conservation of Serbia with counterpart institutions of the former republics of Yugoslavia, countries in the region, and the European Union.

Thanks to the engagement of the employees of the Chair of Landscape Engineering, an agreement on cooperation and an agreement on the exchange of students was signed in 2003 between the study programme of Landscape Architecture of the Faculty of Forestry, University of Belgrade and the Department of Landscape Architecture and Environmental Planning, Utah State University, USA.

Through their participation in various forms of scientific and professional training programmes, teachers and associates of the Chair of Landscape Engineering have achieved notable cooperation with foreign institutions, such as Department of Horticulture, Wonkwang University in South Korea, Mendel University in Brno, Czech Republic, American University in Beirut, Lebanon (AUB, Department of Landscape Design and Ecosystem Management), “Jovan Hadži” Institute of Biology in Ljubljana, Slovenia (Biološki Inštitut Jovana Hadžija ZRC SAZU).

They also participated in the professional training in Nürtingen, Germany, under the auspices of the International Green Roof Association (IGRA), as well as training in the management of protected natural areas (organised by the Faculty of Forestry, University of Belgrade, and the Faculty for Forestry and Environmental Protection, University of Freiburg).

Among others, the participation and achievements of Dr. Đurđa Petrov at international festivals must be emphasised. In partnership with other colleagues, she won an international award for the Dodola Garden Project at the II International Garden Festival in Aljaris (Spain) in 2011. At the III International Garden Festival (Aljaris, Spain) in 2012, again in a partnership, she won an award for the project named Garden at the Edge of the World. In 2011, together with co-authors, she was awarded the Plaque of the VI Salon of Landscape Architecture for her work Dodola Garden, Fashion in the Garden.

Regarding the participation of the Chair of Landscape Engineering in the work of the Faculty of Forestry, the engagement of Prof. Dr. Mirjana Ocokoljić in its management structures should be stressed. She served as vice-dean for teaching at the Faculty of Forestry, University of Belgrade, from 2009 to 2012. Since 2012, Prof. Ocokoljić has been the chairman of the Council of the Department of Landscape Architecture and Horticulture.

Cooperation of prof. Dr. Mirjana Ocokoljic with domestic institutions is another form of cooperation we should note. Throughout her career, she has achieved exceptional cooperation with the Faculty of Agriculture of the University of Novi Sad, Biotechnical Faculty of the University of Bihać, and the Faculty of Agriculture of the University of Banja Luka. Since 2013, she has been a reviewer of the Commission for Accreditation and Quality Assurance (CAQA) and the National Entity for Accreditation and Quality Assurance in Higher Education (NEAQA).



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Professional activities of the Chair staff members include the participation of its teachers and associates in commissions of professional associations and professional exam committees in the field of landscape architecture. In a joint effort of the Chair of Landscape Engineering, the Chair of Planning and Design in Landscape Architecture, and the Association of Landscape Architects of Serbia, the license for a responsible contracting engineer for landscaping free spaces was introduced in 2003. Since 2011, Dr. Nadežda Stojanović, Assistant Professor, has been a member of the professional exam committees in the field of landscape architecture of the Engineering Chamber of Serbia.

Regarding cooperation with domestic institutions and organisations, we should note the cooperation with the Ministry of Education, Science, and Technological Development of the Republic of Serbia. In partnership with this ministry, the Chair has realised several scientific and professional projects. Other institutions with which the Chair has cooperated include the Institute of Forestry in Belgrade, "Siniša Stanković" Institute for Biological Research in Belgrade, Institute of Soil Science in Belgrade, Institute for Plant and Environmental Protection in Belgrade, etc.

A wide range of scientific disciplines of the Chair of Landscape Engineering has initiated cooperation with related faculties at home and abroad. These faculties primarily include the Faculty of Agriculture of the University of Belgrade, Faculty of Biology of the University of Belgrade, Faculty of Organisational Sciences of the University of Belgrade, and Faculty of Mathematics of the University of Belgrade.



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13 Students working in the Arboretum of the Faculty of Forestry in the course of Special-purpose Green Spaces;

14 Students participating in the project of improving teaching in the courses of the Chair of Landscape Engineering

Selected projects

National projects and studies

- “Mediterranean floral elements in Belgrade green areas in the conditions of climate change”, Higher education development, domestic development projects (led by Dr. Jovana Petrović, Assistant Professor), Ministry of Education and Science of the Republic of Serbia, (2018–2019)
- “Reconstruction of public greenery of the central part of Belgrade to achieve ecological revitalisation and preservation of natural, cultural-historical, educational, and aesthetic values of the city”, led by Prof. Dr. Nebojša Anastasijević, Ministry of Natural Resources and Environmental Protection of the Republic of Serbia, Belgrade, (2003)
- “Reconstruction of the tree line along the quay of the Nišava River in Pirot”, led by Prof. Dr. Nebojša Anastasijević, Faculty of Forestry, Belgrade, (2004)
- “Feasibility study for the establishment of a nursery for the production of seedlings for the reclamation of ash and slag dumps of TPP Nikola Tesla in Obrenovac”, led by Prof. Dr. Nenad Stavretović, Faculty of Forestry, Belgrade, (2005)
- “Assessment of the current quality of plant material in the area of Mali Park in Obrenovac”, led by Prof. Dr. Nenad Stavretović, Faculty of Forestry, Belgrade, (2007)
- “Assessment of the current quality of plant material of Central Square in Obrenovac”, led by Prof. Dr. Nenad Stavretović, Faculty of Forestry, Belgrade, 2007.
- “Assessment of the state of tree seedlings in the narrow centre area of Obrenovac”, led by Prof. Dr. Nenad Stavretović, Faculty of Forestry, Belgrade, (2007)
- “Climate change and its impact on the environment – monitoring of the impact, adaptation, and mitigation”, sub-project no. 12 “Ornamental and invasive plants in the conditions of climate change and adaptations”, (EVB 43007), led by Prof. Dr. Ratko Kadović, Ministry of Education and Science of the Republic of Serbia, (2011–2019)

International projects

- “Consultant on Training Programme for gardening and green area planning”, a study led by Prof. Dr. Nenad Stavretović, Swedish International Development Cooperation Agency (SIDA), OPTO International AB, Topola Rural Development Program, Serbia, (2004)
- “Consultant on Training Programme for green sport fields maintenance”, a study led by Prof. Dr. Nenad Stavretović, Swedish International Development Cooperation Agency (SIDA), OPTO International AB, Topola Rural Development Program, Serbia, (2004)
- “Consultancy services as the designer for the landscaping of the area around the Karađorđe’s barracks”, a study led by Prof. Dr. Nenad Stavretović, International Development Cooperation Agency (SIDA), OPTO International AB, Topola Rural Development Programme, Serbia, (2004)

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CHAIR OF PLANNING AND DESIGN IN LANDSCAPE ARCHITECTURE

Text drawn up by:
Dr. Nevena Vasiljević, Associate Professor

Brief history

The Chair of Planning and Design in Landscape Architecture started its independent development at the Faculty of Forestry in 1966. Before that, the Department of Residential Greening was founded in 1960 and had a single chair – Chair of Residential Greening. It included all courses of the narrow field of the profession, including the courses in planning and design of green spaces. Amendments to the Statute of the Faculty of Forestry in 1966 introduced another chair at the Department – **Chair of Residential Green Space Design**, the forerunner of today's **Chair of Planning and Design in Landscape Architecture**. Professors Branko Petričić and Lazar Pribić laid the foundations and directed scientific, professional, and educational work in the field of planning and design in landscape architecture.

Besides the two profession-oriented courses – Park Design and Landscape Planning, teachers of the Chair taught Freehand Drawing, History of Art and Horticulture, and Fundamentals of Urban Hygiene. The first generation of professors who performed the teaching were Professor Branko Petričić and Professor Lazar Pribić, Professor Milivoje Milo Dimitrijević, academic painter (Freehand Drawing) and Professor Dr. Nenad Simić, art historian, (History of Art and Horticulture).

After the constitutional amendments in 1974, the Department was renamed the **Institute of Landscape Architecture** with two chairs in its organisational structure: Chair of Residential Greening and **Chair of Green Space Design**. Before 1980, scientific and professional research at the Chair was in the domain of design in landscape architecture. Besides Professors Branko Petričić and Lazar Pribić (Park Design and Landscape Planning), the Chair hired visiting teachers of architectural sciences. Further development required the introduction of the courses that studied the spatial and engineering approach to the design of green spaces (Civil Engineering, Hydrotechnics, and Fundamentals of Urbanism).

CHAIR STAFF:

Teaching staff

Dr. Nevena Vasiljević,
Associate Professor,
Head of Chair

Dr. Biljana Jović,
Assistant Professor

Dr. Boris Radić,
Associate Professor

Dr. Dejan Skočajić,
Assistant Professor

Dr. Dragana Ćorović,
Assistant Professor

Dr. Milena Vukmirović,
Assistant Professor

D.A. Milena Putnik,
Assistant Professor

Dr. Nevenka Galečić,
Assistant Professor

Professional and technical associates

MSc Andreja Tutundžić,
Higher Education Associate

MSc Dragan Vujičić,
Higher Education Associate

Grad. Eng. Suzana Gavrilović,
Research Associate

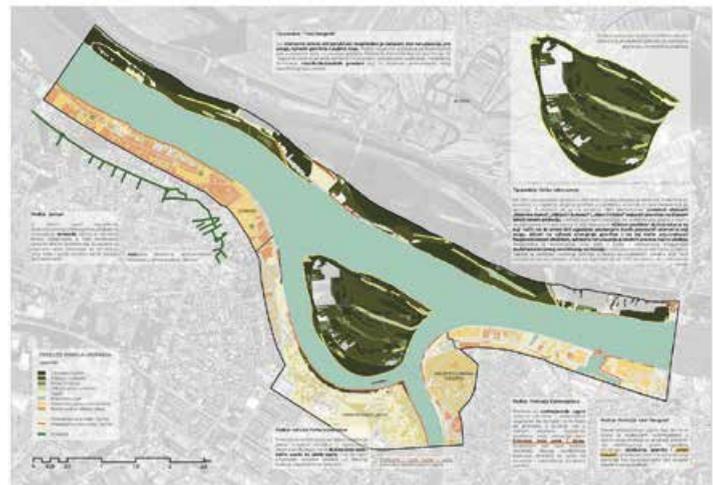
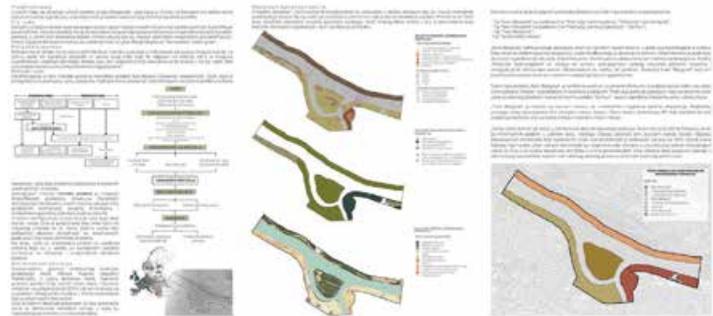


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1 Members of the Chair of Planning and Design in Landscape Architecture

The first generation of teachers was joined by prof. Stevan Milinković in 1981. Prof. Milinković was the first post-war educated landscape architect who earned a degree at the Technical High School in Hanover (Germany) in 1958. Besides the green space design, the Chair began an increasingly significant development of **landscape planning**, promoted by Professor Milinković as a distinct scientific, planning, and designing discipline. He believed that this discipline was aimed to ensure sustainable use of natural resources through the protection, care, and promotion of landscapes, thus maintaining the ecological balance between the biological potential of landscapes and community requirements.

Current social trends in the field of spatial and urban development and environmental issues that arose primarily in urban areas, according to Professor Milinković, had to be addressed using a multidisciplinary research methodology. Therefore, he decided to enhance the teaching in planning and design by engaging architects: Professors Dr. Vladimir Macura (Urbanism), Dr. Mirko Kovačević (History of Landscape Architecture and Elements of Green Space Design), and Dr. Mara Đukanović (Environmental Protection). Profession-oriented courses at the Chair were developed from the seventies onwards, thanks to professors Dr. Ljiljana Vujković (Park Design) and Dr. Jasminka Cvejić (Landscape Planning and Management). In the late 1980s and early 1990s, young teaching assistants of the Chair continued to develop these disciplines – MSc Dragan Vujičić and Mileva Puača, Grad. Eng. of landscape architecture, while Dr. Nevenka Galečić dealt with elements of landscape architectural design that make an important segment of the engineering approach to designing green spaces. In that period, a significant contribution to laying the foundations of landscape ecology as a science that has introduced a new dimension to the study of space on various



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2 The Great War island – the core of the green infrastructure of the urban landscape of the city of Belgrade – student work

3 A selection of students work produced in the classes of Drawing and Artistic Design

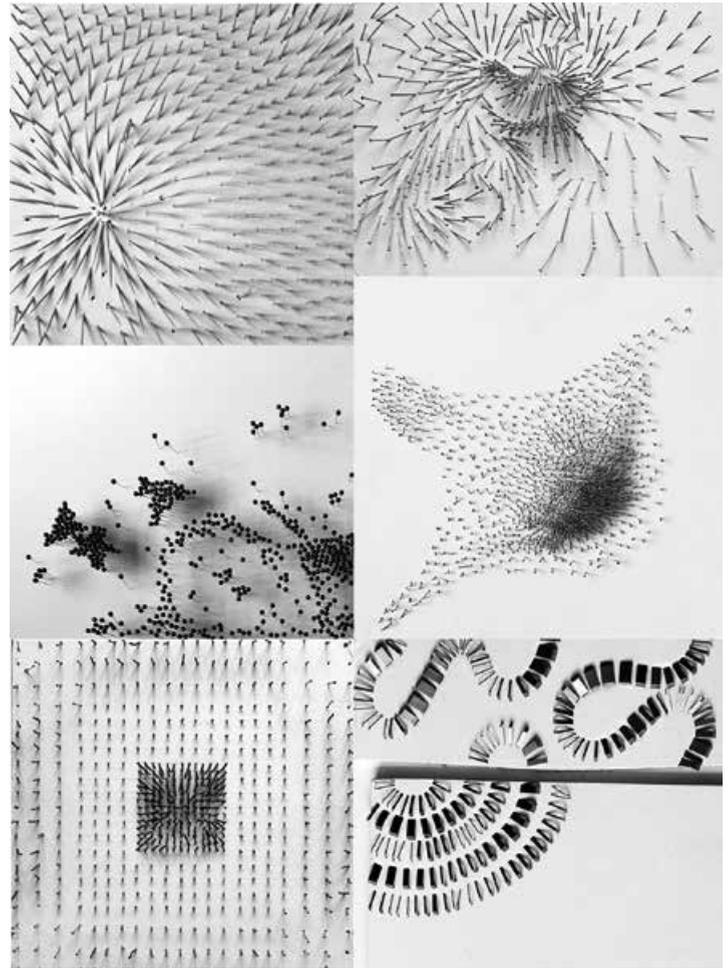
scales, besides Professor Dr. Jasminka Cvejić, was given by Dr. Stojanka Radulović.

The Chair acquired its current name – Chair of Planning and Design in Landscape Architecture in 1990. During the 1990s, the Chair had eight courses in undergraduate studies. Since 2002, this number has been constantly changing with the changes in the Faculty curricula.

The end of the past and the beginning of this century were marked by the arrival of a new generation that continued the tradition, but also began to deal with modern theoretical and methodological approaches in teaching and scientific research in different areas: Dr. Nevena Vasiljević (Environmental Protection and Landscape Planning and Management), Dr. Dejan Skočajić (History of Landscape Architecture), MSc Mirjana Avramović and MSc Andreja Tutundžić, (Landscape Planning and Management). As a visiting professor from the Faculty of Architecture, University of Belgrade, Professor Dragana Bazik taught the courses in Elements of Landscape Architectural Design, while the course in Urbanism and Spatial Planning started to be developed within the master's degree study programme (Open City Spaces) by Dr. Zoran Đukanović, Architect, and MEng Aleksandar Bobić, Teaching Assistant.

Fine arts are represented by the course of Freehand Drawing, in which observation skills are improved with the theoretical knowledge of the form, and drawing is mastered as an auxiliary tool in the development of design and planning skills. The work of Professor Milo Dimitrijević was continued by Professor Emilija Stambolić, Academic Sculptor, from 1999 to 2008. Today art courses are taught by D.Arts Milena Putnik.

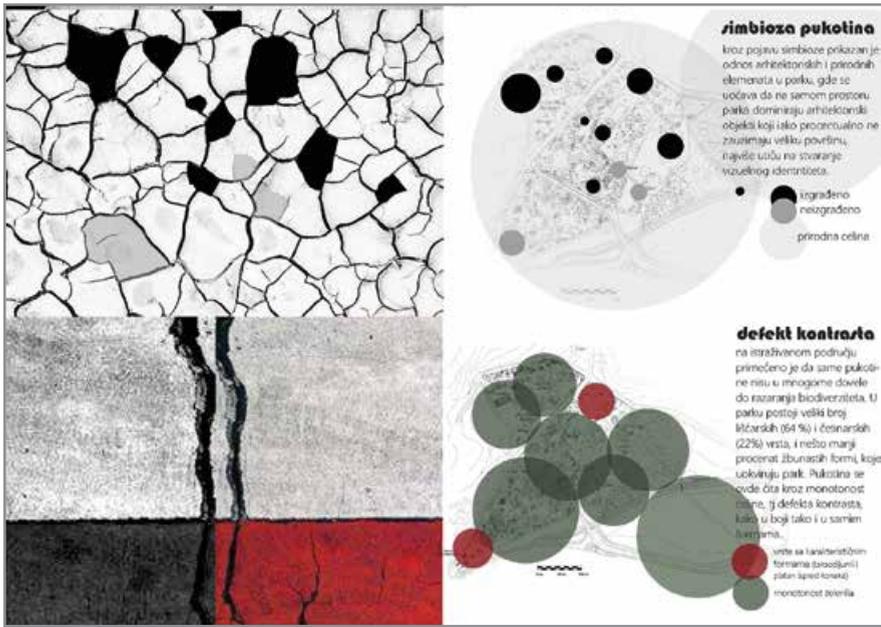
Descriptive Geometry and Landscape Architectural Graphics are taught by Dr. Biljana Jović. In these courses, students develop the ability to perceive and interpret three-dimensional space.



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Teaching and enhancement of the courses in planning and design have been entrusted to Dr. Boris Radić since 2013 (Landscape Ecology) and Dr. Dragana Ćorović (Landscape Architectural Design and Contemporary Landscape Architecture). Teaching the course that belongs to the narrow scientific field of Urbanism has been entrusted to Dr. Milena Vukmirović since 2016.

Since 2014, there have been 13 compulsory courses of the undergraduate academic studies taught by the Chair of Planning and Design in Landscape Architecture. These are Descriptive Geometry, Drawing, Garden Art History, Landscape Architectural Graphics, Elements of Landscape Architectural Design 1 and 2, Applied Geomorphology with Hydrology, Garden Design, Fundamentals of Urbanism, Landscape Architectural Design 1 and 2, Landscape Ecology, and Landscape Planning and Management. Elective courses include Artistic Design, History of Landscape Architecture, Landscape Aesthetics, and Contemporary Landscape Architecture. Within the master's degree studies, the Chair is in charge of one compulsory course (Landscape Planning and Landscape Design – Studio) and six electives (History and Conservation in Landscape Architecture, Design of Open Urban Spaces, Healing Gardens, Cultural Landscape, Urban Landscape: Research and Understanding,



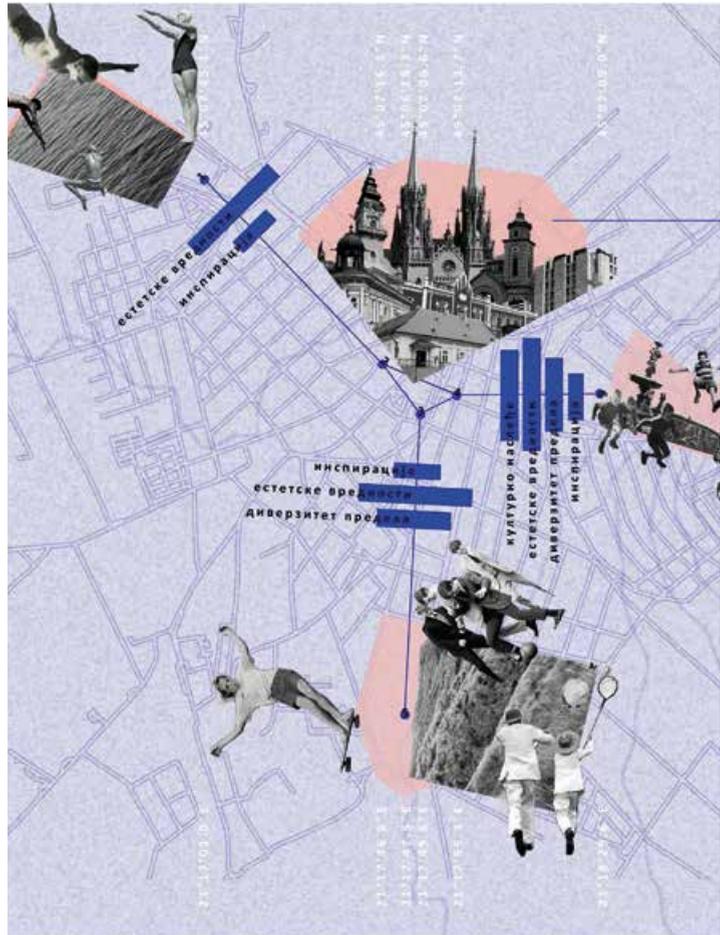
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4 The project of landscaping Topčider Park – context analysis, student work (detail)

5 Cultural landscape of Vršac Mountain – mapping of cultural ecosystem services, master’s thesis (detail)

Digital Visualisation in Landscape Architecture). In the doctoral studies of the Faculty of Forestry, Chair teaches courses in Theoretical and Methodological Research in Landscape Planning, Landscape Metrics, and Geometric Modelling and Visualisation in Landscape Architecture.

Hundreds of graduation papers, over 50 master’s theses, eight Master of Science theses and six doctoral dissertations have been defended at this chair. Within the Chair, professional research work and cooperation with the economy have been carried out within the Centre for Landscape Planning and Design and Landscape Laboratory.



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Scientific research and professional activity

6 "A proposal of the green space network as means of improving the environment and city image in the municipality of Vračar"

Since the establishment of the Chair, teachers and associates have been engaged in scientific research and professional work aimed to respond to the needs of modern society. In the early years of its development, research and professional activity of the Chair was focused on designing, while in the mid-1990s, it took on a landscape planning discourse.

The construction of New Belgrade was planned and developed following the principles of the Athens Charter and Le Corbusier's principles of city planning. It implied a significant increase in parks and green spaces within residential blocks. In response to the need for the development of the system of green spaces of the city of Belgrade laid out by the General Urban Plan of 1950, the first systematic research studies in the field of residential greening and landscaping were conducted during the 1960s. They addressed complex issues of designing and building green spaces in New Belgrade. The results of these research studies were published in the Contribution to the methodology of designing residential green spaces.

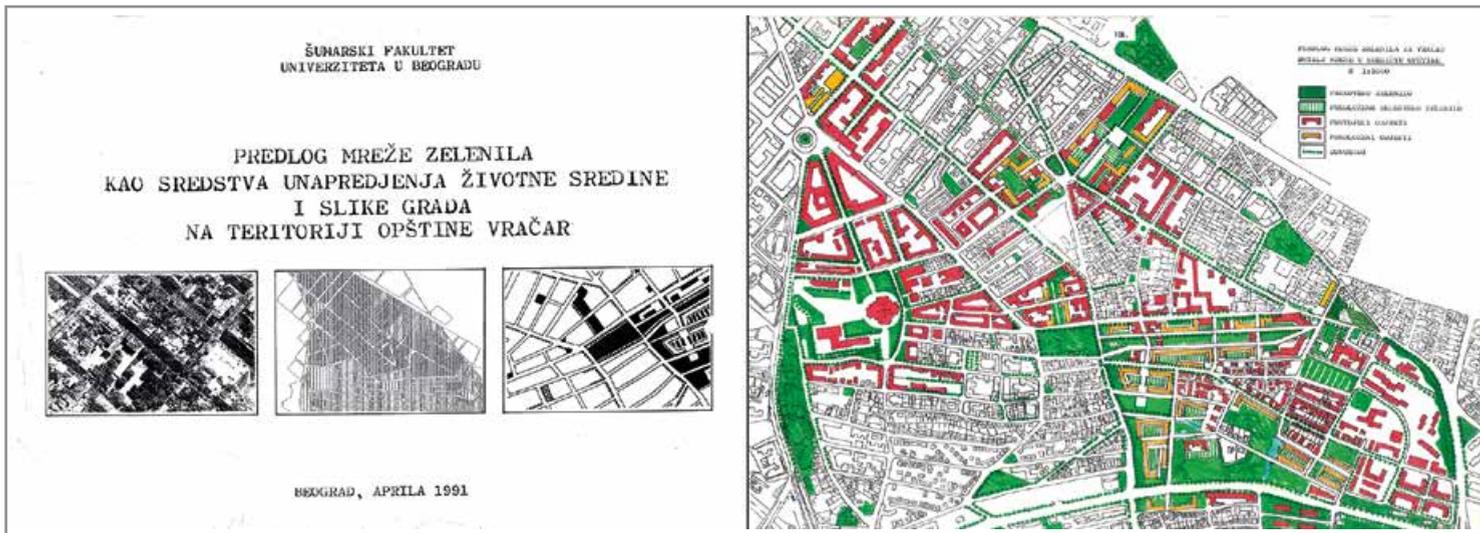
From 1970 to 1980, teachers and associates participated in the scientific project "Research of residential green spaces as an important component of the improvement and protection of the living and working environments of urbanised areas", where they addressed problems of designing residential green spaces and landscape management of Serbia, with a special emphasis on their sanitary-hygienic, aesthetic, and psychogenic features. The community needs for green space designing were constantly increasing, and as there were no organisations that could provide this type of service, a large number of green space projects (parks, recreational spaces, residential blocks, schools, kindergartens, etc.) were carried out by the Chair.

In the same period, cooperation with related institutions was ensured both at home and abroad. For instance, the Chair developed the conceptual and main design with a bioecologi-

cal analysis of the spatial arrangement of green spaces around the strategic buildings of Baghdad (Iraq) in partnership with Aerospace Engineering from Belgrade.

The period from 1980 to 1990 was marked by the scientific research engagement in the research project that studied efficient, economical and from the aspect of the environmental protection and enhancement optimal solutions for the establishment, reconstruction, and maintenance of green spaces. It dealt with the planning and designing of residential green spaces and landscaping of SR Serbia, current trends in the spatial development, and their impact on the development and quality of designing residential green spaces and landscapes. Needs and opportunities for the development of the planning and design of residential green spaces and landscapes of SR Serbia were analysed for the medium-term of 1986-1990 and the long-term period till 2000. Professional activity was also directed towards the development of the project for the rehabilitation and management of unused areas around the Pljevlja coal mine.

In the late 1980s, scientific research work was conducted within the study project "Impact of green spaces on the protection and improvement of the environment of urbanised areas of SR Serbia". The methods for the evaluation of all space uses were investigated, with special reference to the evaluation of recreational spaces of large cities. Optimum systems of city green spaces were researched and planned, with particular emphasis on the cities with degraded environments. Besides, peripheral zones as parts of urban landscapes of Serbia that changed under the influence of spontaneous urbanisation, have been studied from the aspect of their optimum use and spatial organisation, with special attention paid to the formation of the system of green spaces. At that time, the conceptual and main designs of the "Sremski Front" monumental complex were produced at the Chair.



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The research conducted during the 1990s was also quite fruitful. The study entitled “A proposal of the green space network as a means of improving the environment and city image in the municipality of Vračar”, whose creators and implementers were members of the Chair, was carried out in 1991 and awarded the Grand Prix of the Salon of Urbanism in 1992. The project “Hope for Belgrade’s river islands” was awarded the Third Prize at the International competition “ISOCARP Award for Urban Ecology” held in Prague, the Czech Republic, in 1994.

The first decade of the new millennium was marked by the continual attempts of our higher education to adapt to the European academic framework proclaimed by the Bologna Declaration signed by the Republic of Serbia in 2003. This dynamic time had some influence on the work of the Chair, mostly in establishing cooperation with institutions abroad. The first significant project, supported by staff members of the Chair was the organisation of the annual meeting of the European Landscape Architecture Student Association – ELASA held in Belgrade in 2002 with the topic “Back to the River”. By far the most important activity in this period was the realisation of the TEMPUS “LENNE” project in which, at the initiative of the Chair, the Department of Landscape Architecture and Horticulture was involved from 2005 to 2008. The goal of the LENNE project was to develop a two-year master programme in landscape planning and management and to lay firm foundations for its sustainable realisation. A specific goal of this programme was to ensure the implementation of the principles of the European Landscape Convention and engagement of experts whose task would be to apply them in academic frameworks. During the three years of project duration, project participants from the Technical University of Vienna, Biotechnical Faculty of the University of Ljubljana, Corvinus University in Budapest,

Manchester Metropolitan University of Great Britain, Slovak University of Technology, Swedish University of Agricultural Sciences, University of Novi Sad, as well as the European Federation of Landscape Architects (EFLA), European Council of Schools of Landscape Architecture (ECLAS) and Associations of Landscape Architects of Serbia developed curricula for nine narrow scientific fields of landscape architecture. Another result of this project was a computer laboratory equipped with 20 computers, supporting equipment, and licensed specialised software. It is especially important to note that the book fund of the Faculty library was enriched with more than 400 titles of professional literature. At the end of this decade, members of the Chair also joined the CEEPUS programme (Central European Exchange Programme for University Studies) of the exchange of students and teaching staff in the states of Central Europe.

At the end of the first and during the current decade, besides the intense cooperation with institutions at home and abroad, it is necessary to stress the Chair efforts to promote student activities and encourage their engagement in crucial social issues. From a series of workshops, competitions, projects, and exhibitions to which the Chair has given significant contribution, the project “Urban Pockets of Belgrade” and several Healing Garden projects should be stressed as the first initiatives of this kind in Serbia. “Landscape architecture and the city – feel the difference” – open-air student workshop (Makenzijeva Street in Belgrade) and periodic participation in the World Biennial of Schools of Landscape Architecture in Barcelona are also achievements we are proud of. In the same period, connections were made with the Faculty of Architecture of the University of Belgrade and the Faculty of Architecture of the University of Montenegro. This cooperation gave teachers of the Chair an opportunity to participate together

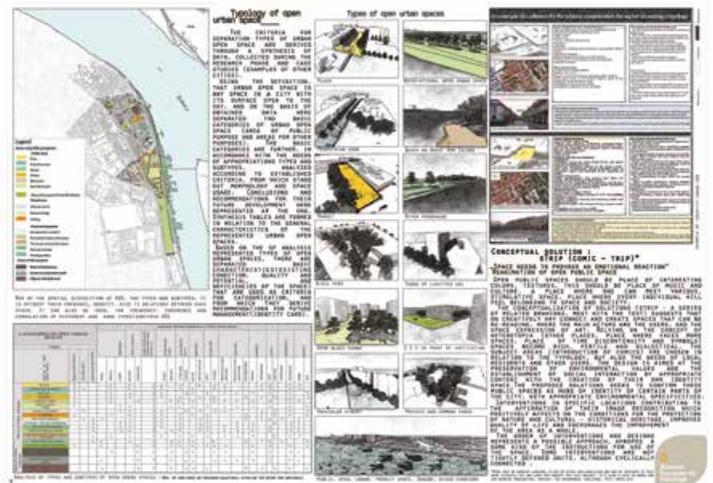
with students in the following workshops: Cultural Landscape of the Bay of Kotor; Brownfield Locations of Cetinje; Ecological Placemaking – Plav. Since 2012, the Geometry Workshop has been organised as an extracurricular activity. The exhibition on the occasion of International Landscape Day has been organised since 2018.

Our teachers have also been engaged in the adoption of the Action Plan for the implementation of the European Landscape Convention (Ministry of Environmental Protection), commissions for professional control of spatial plans (Ministry of Construction, Transport, and Infrastructure), professional exam committees (Serbian Chamber of Engineers), etc.

Members of the Chair address the general and academic public with lectures that promote the significance and values of landscape architecture throughout history and its significance in the contemporary social context (Kolarac Endowment, Association of Engineers and Technicians of Serbia, Serbian Chamber of Engineers, Information Centre of the European Union).



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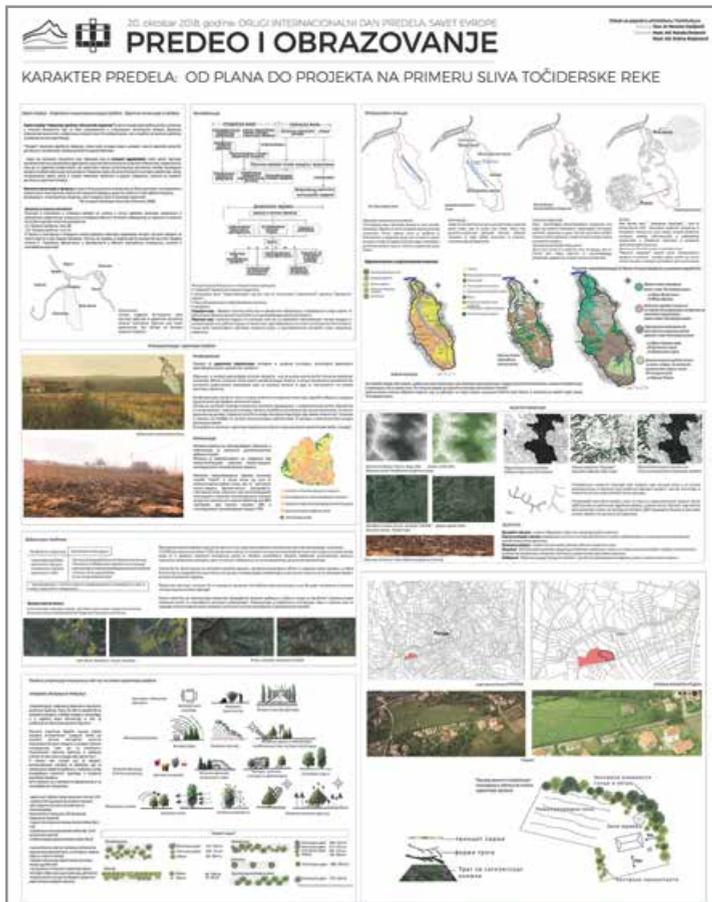
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7 LENNE project: Landscape Education for a New Neighborhood of Europe

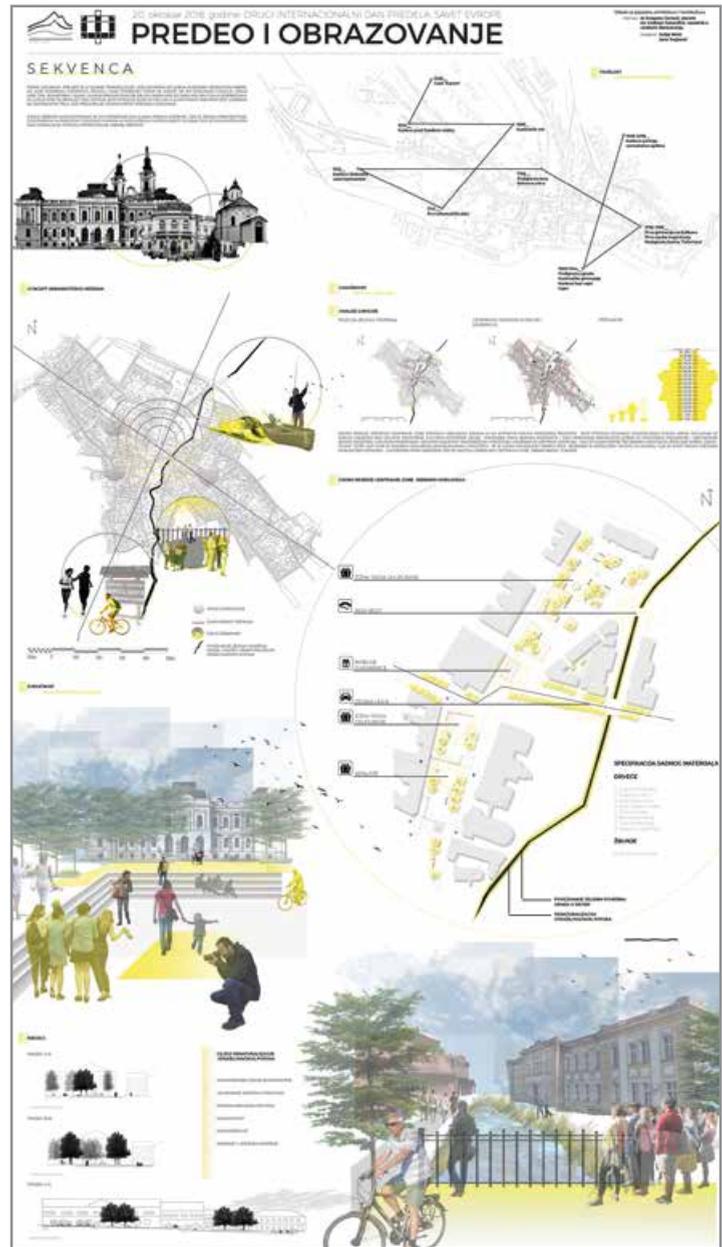
8 Student work exhibited at the Biennial of Landscape Architecture in Barcelona



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9 Students participating in the project Landscape architecture and the city – feel the difference – student workshop, Makenzijeva Street in Belgrade

10, 11 Exhibition “Landscape and education – student work”

Cooperation with other institutions

Since its establishment, the Chair of Planning and Design in Landscape Architecture has cooperated with different international organisations, state and local government institutions, public enterprises, institutions, agencies, and other organisations. Regarding international organisations, we must stress cooperation with the Council of Europe. Our teachers participate in the work of its bodies by monitoring the application of the European Landscape Convention at the national level. Regarding domestic institutions, there has been intense cooperation with the Ministry of Environmental Protection, Ministry of Construction, Traffic, and Infrastructure, Agency for Spatial Planning, Institute for Nature Conservation of Serbia, Secretariat for Environmental Protection of the City of Belgrade, Institute for the Protection of Cultural Monuments of the City of Belgrade, PE Belgrade Urban Planning Bureau, PE "Srbijašume", PUC Greenery Belgrade and others. The participation of the Chair members in the development of spatial and urban plans has also been very significant (e.g., Spatial Plan of the Republic of Serbia 2010–2020, Regional Spatial Plan of the City of Belgrade, General Plan of Belgrade 2021), as well as the project "Green Regulations of Belgrade" and the projects for landscaping the metochion of the Hilandar monastery in Kakovo, Chalkidiki and the access road to the Hilandar Monastery on the Mount Athos. Cooperation has also been achieved with local self-governing units through the implementation of teaching and student projects in the courses of the Chair.

The Chair of Planning and Design in Landscape Architecture has made a significant contribution to the founding of the Association of Landscape Architects of Serbia (UPAS). Since its establishment, members of the Chair have been actively participating in the work of its management and supervisory boards. They have also participated in a great number of its activities, among which the Biennial Landscape Architecture

Exhibition is certainly one of the most important. It was established in 2005. Our Chair staff members have supported this important event of landscape architecture in Serbia since its establishment as members of its councils, juries, and selection committees.

Multidisciplinarity and willingness to cooperate are the principles that have initiated the cooperation of the Chair of Planning and Design in Landscape Architecture with other faculties in our country and abroad. Among others, we should emphasise the collaboration with numerous faculties of the University of Belgrade (Faculty of Architecture, Faculty of Biology, Faculty of Geography, Faculty of Agriculture), Faculty of Applied Arts of the University of Belgrade, Faculty of Fine Arts of the University of Belgrade, Biotechnical Faculty of the University of Ljubljana, University of Applied Sciences in Erfurt, Germany, Norwegian Institute for Spatial Inventory, ETH University of Zurich and others. Within the collaboration with international academic organisations, members of our chair are contact persons coordinating the work with the European Council of Landscape Architectural Schools – ECLAS and LE: NOTRE Landscape Architecture School Forum.

Besides, our chair staff members have been active in professional associations of landscape architects, such as the European Federation for Landscape Architecture – EFLA, or as members of the Panel for accreditation of landscape architecture programmes at the European level and the International Federation for Landscape Architects – IFLA in defining educational standards in landscape architecture on a global scale.

This review of achievements presented on the jubilee significant both for the Faculty of Forestry and Department of Landscape Architecture and Horticulture points to a respectable legacy that obliges the Chair of Planning and Designing in Landscape Architecture to continue its dedicated work on the further development of the landscape architect profession. This legacy has gained increased importance now when society faces global problems unprecedented in history, and the role of landscape architecture seems to be more significant than ever before. The need to promote the profession with considerable potential to respond to some of the key global challenges is of even greater importance in developing countries, such as Serbia. Therefore willingness to cooperate with domestic and international institutions and organisations and promote students' activities that lead to permanent professional and pedagogical training remain long-term commitments of the Chair of Planning and Design in Landscape Architecture.

Selected projects

National projects and studies

- “Master Plan of Belgrade till 2021, System of green spaces and protection of nature and natural goods”, PE “Belgrade Urban Planning Bureau”, led by Prof. Dr. Jasminka Cvejić, (2001–2003)
- “Main design of landscaping green spaces – tree lines in Kostolac”, Thermal Power Plant Kostolac, 2004, led by Prof. Dr. Ljiljana Vujković
- “Spatial plan for the protection of landscapes of preserved natural-historical values on the territory of Belgrade in accordance with the Convention on European Landscapes”, Secretariat for Environmental Protection of the City of Belgrade, led by Prof. Dr. Jasminka Cvejić (2006–2007)
- “The Green Regulation of Belgrade”, PE “Belgrade Urban Planning Bureau”, Secretariat for Environmental Protection of the City of Belgrade, led by Prof. Jasminka Cvejić, (2006–2008)
- “Main design of adaptation and rehabilitation of the City Park in Zemun”, City of Belgrade, led by Prof. Dr. Ljiljana Vujković (2007)
- “Main design of adaptation and rehabilitation of Pioneer Park in Belgrade”, City Administration of the City of Belgrade, led by Prof. Dr. Ljiljana Vujković (2007–2008)
- “Spatial Development Strategy of the Republic of Serbia”, a study-analytical plan of spatial development strategy of the Republic of Serbia, Values of landscapes and physical structures of settlements in Serbia as elements of culture and identity, Spatial Planning Agency, Ministry of Environmental Protection and Spatial Development of the Republic of Serbia, led by MSc Nevena Vasiljević, (2008–2009)
- “Defining criteria and creating information system for the evaluation of urban biotopes to meet the needs of spatial planning”, Secretariat for Environmental Protection of the City of Belgrade, MapSoft, Belgrade, led by MSc Anica Teofilović and MSc Andreja Tutundžić, (2013)
- “Conceptual design for landscaping the churchyard of St. Ilija Church and a log church in Vranić”, The City of Belgrade, Secretariat for Culture, Belgrade, led by Dr. Nevena Vasiljević (2014)
- “Landscape typology for the needs of sustainable development of the City of Belgrade in accordance with the principles of the European Landscape Convention”. City Administration of the City of Belgrade, Secretariat for Environmental Protection, led by Dr. Nevena Vasiljević (2018)



12

International projects

- “TEMPUS Joint European Project – LENNE – Landscape Education for a New Neighborhood of Europe”, Curriculum development for Master Programme in Landscape Planning and Management (2005–2008)
- “Bilateral project of the Republic of Slovenia and the Republic of Serbia 2006–2007: Restoration of Urban Watercourses”, Faculty of Forestry, University of Belgrade and Biotechnical Faculty, University of Ljubljana (2006–2007)
- “Bilateral project of the Republic of Slovenia and the Republic of Serbia 2008–2009”, Landscape typology as a basis for the implementation of the European Landscape Convention in spatial development plans, Faculty of Forestry, University of Belgrade and the Biotechnical Faculty of the University of Ljubljana (2008–2009)
- CEEPUS programme (Central European Exchange Programme for University Studies)

12 Project: Typology of landscapes of Belgrade as a basis for the implementation of the European Landscape Convention in spatial development plans

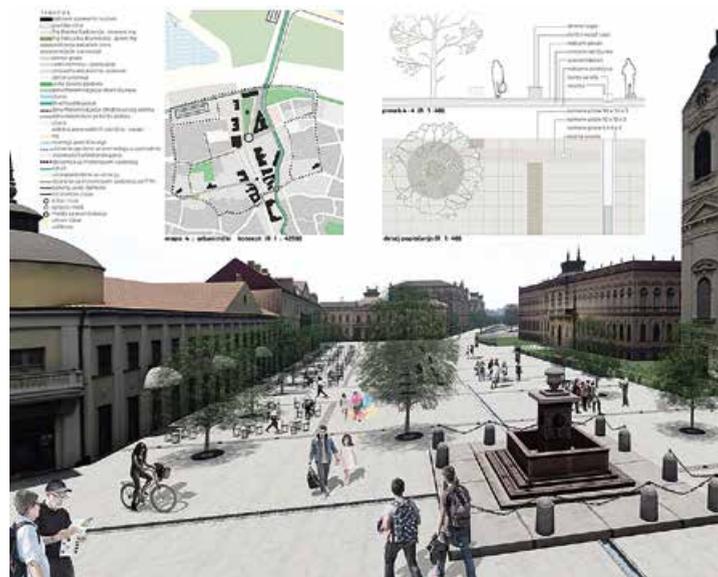
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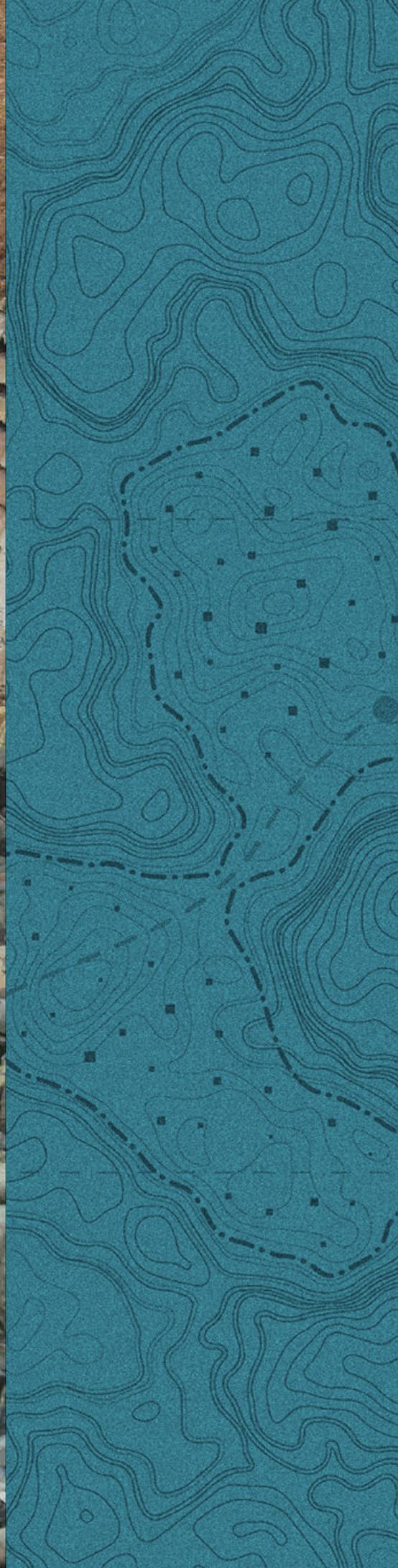
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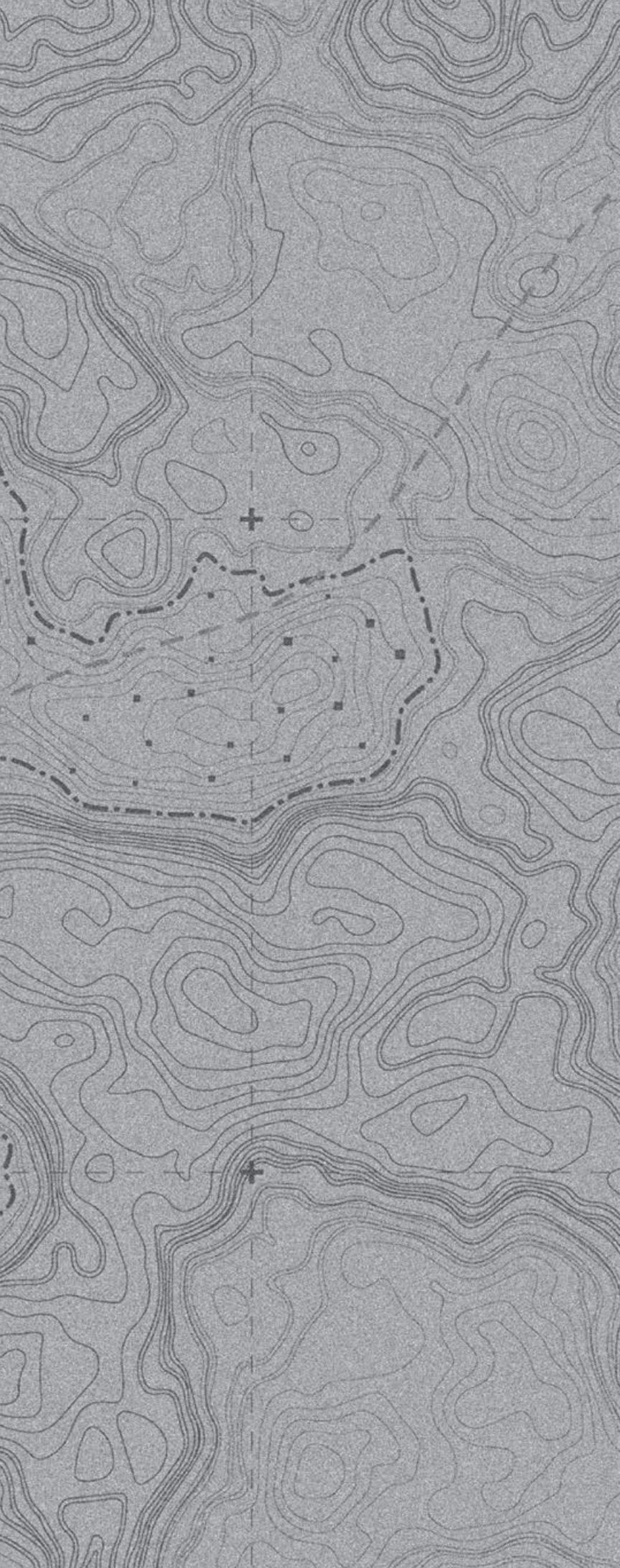
13 Internal student competition and workshop to create the conceptual architectural solution for the landscape architectural design of the Atrium of the Faculty of Forestry



14

14 Landscape and Education Exhibition – student work (detail)





DEPARTMENT OF ECOLOGICAL ENGINEERING FOR SOIL AND WATER RESOURCES PROTECTION

Text drawn up by:
Dr. Miodrag Zlatić, Full Professor

About the Department

The Department of Forestry of the Faculty of Agriculture in Belgrade was founded on 5 December 1920. Till 1949, its curriculum had only one course dealing with the issues of erosion and torrents. It was called Torrent Control and was taught in the sixth year of studies. During the Second World War, the Faculty of Forestry did not work. It reopened after the war in the academic 1945/46. The course in Torrent Control was then taught by prof. Sreten Rosić. The Faculty of Forestry separated from the Faculty of Agriculture in 1949. It remained in the same building as the Faculty of Agriculture in Zemun until the academic 1954/55 when it was relocated to the building where it is today. Since the academic 1952/53, the issues related to torrent and erosion control have been studied in the course of Torrent and Erosion Control in the fourth year of studies.

The Faculty of Forestry established five departments in 1960. The Department of Erosion and Torrents was one of them. The courses at the Department of Erosion and Torrents were organised in two chairs - Chair of Torrent and Erosion Control and Chair of Forest Soil Amelioration.

In 1961, the Department changed its name to the Department of Erosion and Soil Amelioration. Another reorganisation of the Faculty of Forestry was completed in 1973. Departments became institutes and changed the name, except for the Department of Forestry. The former Department of Erosion and Soil Amelioration became the Institute for Water Management of Erodible Areas.

A significant change in the organisation of the Faculty of Forestry took place in 1988. The existing institutes were reorganised into departments, and each department represented one educational profile of the faculty. The department was then named the Department of Erosion Control, and after graduation, students became graduate engineers of forestry in the field of erosion control. There were still two chairs in the structural organisation of the Department – Chair of Torrent and Erosion Control and Chair of Soil Amelioration.

According to the controversial 1998 Law on Higher Education, a new reorganisation of the Faculty was conducted. Besides the existing two chairs at the Department of Erosion Control, another chair was formed. It was the Chair of Erosion Control Geotechnics. The new chair was in charge of the courses in Fundamentals of Geotechnics in Torrent Control, Hydrogeology with Geomorphology, Hydraulics with



1 Teachers and associates of the Department, 2018

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Hydrology, and Construction Organisation and Machinery in Erosion Control Works. The Chair of Erosion Control Geotechnics is still part of the Department, with a change introduced in 2000 when the courses in Hydraulics with Hydrology and Construction Organisation and Machinery in Erosion Control Works again became courses of the Chair of Torrent and Erosion Control. The course in Materials in Erosion Control Works was transferred from the Chair of Torrent and Erosion Control to the Chair of Erosion Control Geotechnics. Having adopted the Law on Higher Education in 2005, the Faculty amended the Statute and introduced new curricula for all educational profiles based on the principles of the Bologna Declaration. One significant change was the new name of the Department that has remained to date – Department of Ecological Engineering for Soil and Water Resources Protection.

The name of the Department was derived from the name of the undergraduate and master's degree study programmes. Elective courses were introduced in all study years. The study programme of undergraduate academic studies in Ecological Engineering for Soil and Water Resources Protection was first accredited in 2009. The study programme of master's degree studies was accredited at the same time as a joint programme, in which the Department had two modules. In the 2013 accreditation, study programmes of undergraduate and master's degree studies of Ecological Engineering for Soil and Water Resources Protection were accredited, while there was still one joint study programme of doctoral studies for all four departments of the Faculty of Forestry.

The Department has had active cooperation with universities in the Balkans and Europe, above all with BOKU University of Vienna (Department of Torrent and Avalanche Control), Technical University of Technology from Brno, and Mendel University from Brno. This cooperation implies the exchange of experience on the management of torrents and protection against erosion, comparison of academic educational modules, faculty exchange programmes for teachers and researchers, faculty exchange programmes for students, joint programmes and projects, potential joint master's degree course, working meetings, conferences, etc.



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The Student Forum of the World Association of Soil and Water Conservation was established at the Department in 2005. The forum was reorganised in 2019 on the principles of decentralisation, and its goals, activities, and membership were defined by the Statute. The goals of this Forum are:

- training related to the implementation of conservation approaches and technologies in practice;
- participation in the projects of the Department;
- dissemination of ideas of this Organisation on the conservation of natural resources;
- membership strengthening and expanding;
- organisation of seminars and professional meetings;
- organisation of professional excursions;
- paper publishing.

A total of 739 students have graduated from the Department. Of that number, 652 graduated following the old programme that was in force until 2006. Since the establishment of the Department, a total of 51 students graduated from the Master of Science studies of the old study programme, and 37 candidates acquired the doctoral degree. Since 2006, the total number of graduates at the undergraduate level in the new programme following the Bologna Process has been 87, master's degree studies 64, and doctoral studies 7.

2 A windbreak nearby Dolovo

4 A contour orchard and contour planting in rows (Grdelica Gorge, Tegovište Village)

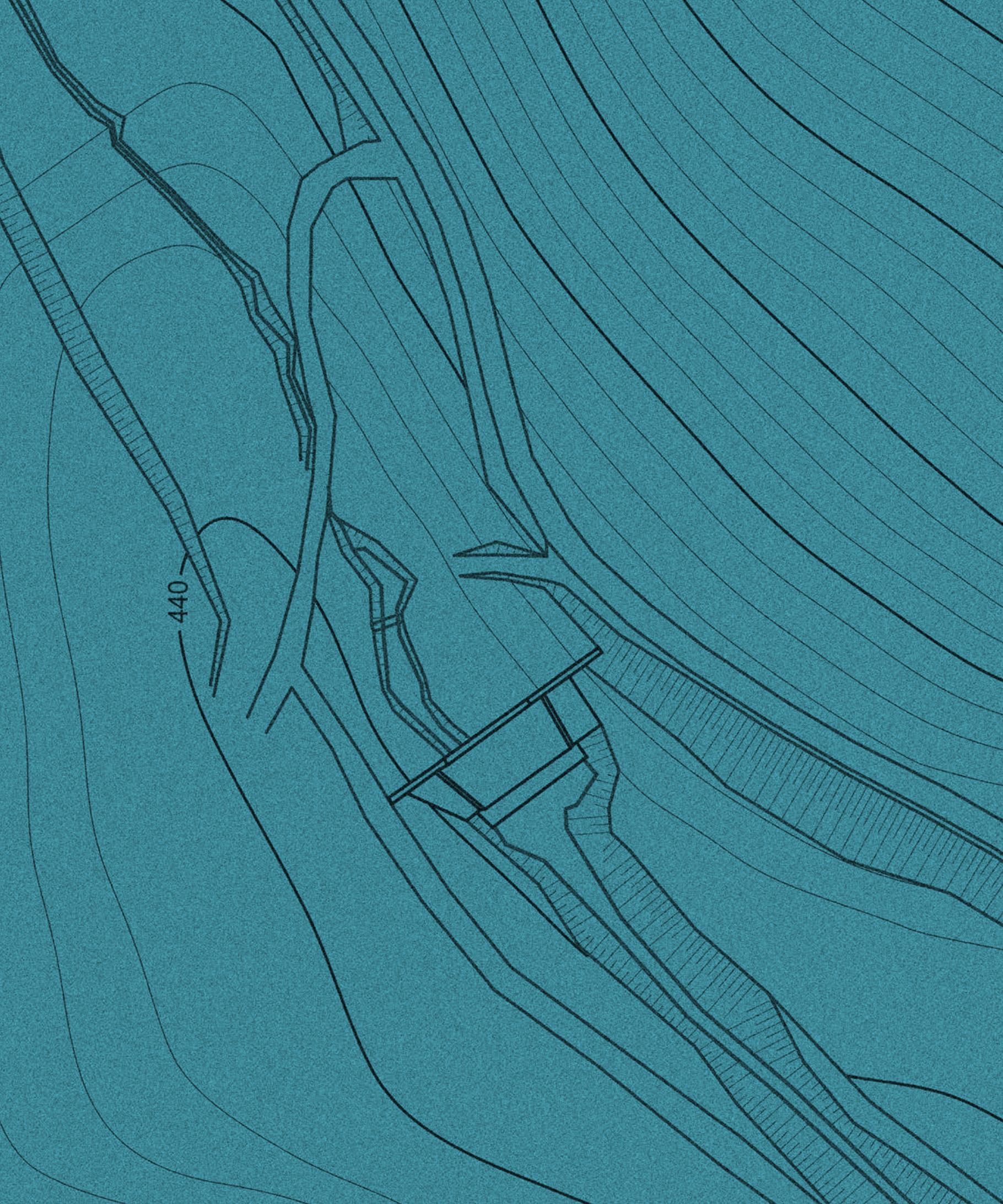
3 Regulation of the Vranje Spa River

5 A landfill dam made of stone in cement mortar

Faculty deans of the Department

The following members of this Department served as deans of the Faculty of Forestry:

- 1949–1951, Prof. Dr. Sreten Rosić, the first dean of the Faculty of Forestry
- 1975–1977, Prof. Dr. Velizar Velašević
- 1983–1985, Prof. Dr. Ljubiša Jevtić
- 2004–2009, Prof. Dr. Ratko Kadović
- 2015 onwards, Prof. Dr. Ratko Ristić



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CHAIR OF TORRENT AND EROSION CONTROL

Text drawn up by:
Dr. Miodrag Zlatić, Full Professor

Brief history

Higher education in the field of forestry in Serbia started on 5 December 1920 at the Department of Forestry of the Faculty of Agriculture in Belgrade. Until 1949, there was only one course dealing with the issues of erosion and torrents. It was called Torrent Control and was taught by Prof. Dr. Ljubivoje Maletić. The course belonged to the Cabinet of Torrent Control and Cultural Technics. After the death of Prof. Maletić in 1940, the course was taught by Prof. Milan Nešić from the Technical Faculty. Eng. Dimitrije Petrović was the teaching assistant in the course. During the Second World War, the Faculty of Forestry did not work.

It reopened after the war in the academic 1945/46. The course in Torrent Control was then taught by Prof. Dr. Sreten Rosić, who became the first dean of the Faculty of Forestry in 1949 when it separated from the Faculty of Agriculture. From the academic 1952/53, the issues of torrent and erosion control were studied in the course called Torrent and Erosion Control. In 1956, two departments were formed – Department of Forestry and Department of Wood Industry.

Following the Decision of the Republic Executive Council, five departments were founded in 1960. The Department of Erosion and Torrents was one of them. The courses at the Department of Erosion and Torrents were divided into two chairs: Chair of Torrent and Erosion Control and Chair of Forest Soil Amelioration. Erosion was studied in Torrent and Erosion Control course for four semesters of the third and fourth years of study by Prof. Dr. Slobodan Gavrilović, who was also head of the Department. The Department was renamed the Department of Erosion and Soil Amelioration in 1961.

After Prof. Dr. Gavrilović retired in 1976, the course was taken over by Prof. Dr. Ljubiša Jevtić as Director of the Institute of Water Management of Erodible Areas. After Prof. Dr. Jevtić retired in 1995, the Torrent and Erosion Control course

CHAIR STAFF:

Teaching staff

Dr. Miodrag Zlatić,
Full Professor
Head of Chair

Dr. Nada Dragović,
Full Professor

Dr. Ratko Ristić,
Full Professor

Dr. Vesna Đukić,
Associate Professor

Dr. Mirjana Todosijević,
Associate Professor

Dr. Tijana Vulević,
Assistant Professor

MEng Katarina Lazarević,
Teaching Assistant

Grad. Eng. Aleksandar Anđelković,
Teaching Assistant

MEng Siniša Polovina,
Teaching Assistant

MEng Ranka Erić,
Teaching Assistant

Professional and technical associates

Grad. Eng. Vukašin Milčanović,
Higher Education Associate

MEng Ivan Malušević,
Higher Education Associate



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1 Construction of the torrential stream regulation in the Timok River Basin, 2019

was taught by Prof. Dr. Stanimir Kostadinov until October 2014, when the course was taken over by Prof. Dr. Ratko Ristić.

Following the Higher Education Act of 1998, another re-organisation took place. Besides the existing two chairs at the Department of Erosion Control, another chair was formed. It was the Chair of Erosion Control Geotechnics. The courses in Fundamentals of Geotechnics in Torrent Control, Hydrogeology with Geomorphology, Hydraulics with Hydrology, and Construction Organisation and Machinery in Erosion Control Works became the courses of the newly-founded chair. The courses in Torrential Streams and Erosion, Design in Torrent Control, Economics in the Management of Erodible Areas, and Materials in Erosion Control Works remained at the Chair of Torrent and Erosion Control.

The change of the Faculty dean after the 5 October Overthrow in 2000 brought about changes in the organisational structure of its chairs. The Chair of Torrent and Erosion Control now had the following courses: Torrential Streams and Erosion, Hydraulics with Hydrology, Design in Torrent Control, Economics in the Management of Erodible Areas, and Construction Organisation and Machinery in Erosion Control Works as compulsory courses. Sediment Management was introduced in 2002 as an elective course.

After the adoption of the Law on Higher Education in 2005, the Faculty amended the Statute and adopted new curricula for all educational profiles based on the principles of the Bologna Declaration. Elective courses were introduced in all study years. Then, the Chair of Torrent and Erosion Control had the following courses in undergraduate studies: Torrential Streams and Erosion 1, Torrential Streams and Erosion 2, Hydraulics with Hydrology, Design in Torrent Control, Economics of Natural Resources Protection, Organisation of Erosion Control Works, and Machinery in Erosion Control Works (compulsory courses) and

a group of elective courses, including Fundamentals of Environmental Protection, Sediment Management, Natural Disaster Risks, Water Management of Hilly and Mountainous Areas, Water Protection, and Spatial Planning of Erodible Areas.

In 2009, Soil Conservation and Soil Amelioration (compulsory courses), Soil Physics, Air Pollution and Forest Ecosystems, and Soil and Bioengineering Techniques (elective courses) were transferred from the Chair of Soil Amelioration to the Chair of Torrent and Erosion Control. According to the accreditation in 2013, the course in Fundamentals of Environmental Protection became a compulsory course. The elective course Natural Disaster Risks was renamed Natural Disasters, and a new elective course in Restoration of Torrential Basins was introduced. In the autumn of 2015, the courses of Soil Amelioration, Soil Conservation, Soil Physics, Air Pollution and Forest Ecosystems, and Soil and Bioengineering Techniques were transferred from the Chair of Torrent and Erosion Control to the Chair of Soil Amelioration.

Scientific research and professional activity



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In its long work, the Chair of Torrent and Erosion Control has realised a range of very important projects funded by ministries and economic organisations. The achieved results are of great importance and once individual scientific research work has become interdisciplinary and multidisciplinary.

Diverse projects of the Chair of Torrent and Erosion Control deal with natural and human factors of erosion processes and torrential floods, as well as protection measures following the principles of integrated and sustainable development. In this sense, the study topics include hydrologic characteristics of torrential catchments, distribution and intensity of soil erosion, sediment production and transport, integrated catchment management in soil erosion and torrent control, sustainable management of soil and water resources, effects of erosion control and conservation works, measures and approaches, mapping of degradation processes and the effects of the protection against these processes, socio-economic and organisational aspects of erosion control and torrent management, as well as the relevant policy, i.e. institutional and legal aspects of this field.

In the last decade, the research conducted at the Chair has been focused on:

- prevention of natural disasters in mountain and forest regions
- agents of torrential floods
- monitoring of water runoff and torrential processes in torrential catchments
- sediment management in torrential streams
- protection of soil and water reservoirs from erosion and sediments
- environmental policy
- effects of conservation technologies and approaches and mapping of both degradation processes and effects of protection against degradation

- community participation in sustainable soil resources management
- conceptual and main designs of the torrent regulation and reservoir protection
- climate change and its impact on natural resources and the environment
- natural and economic justification of investment in the protection from torrential floods
- effects of erosion and torrential flood control works: natural, ecological, and economic.
- management of projects related to erosion and torrential flood control.
- water quality control in different hydrologic conditions.

Torrential floods have caused great material damage and economic losses in Serbia. Their adverse effects can greatly be mitigated by preventive measures that include integrated catchment management. Economic justification of investments in flood protection implies a specific approach, especially with regard to technical facilities in this field. In that sense, the activity of the Chair has stressed the necessity to study this issue more elaborately and recruit staff to conduct this demanding work. The research results of the Chair of Torrent and Erosion Control are available in the papers published in domestic and international journals and numerous reports of studies and projects carried out either in partnership with the economy or through scientific research funded by relevant ministries.

In terms of scientific research projects performed in the 1980s, the following projects were of utmost importance: "Soil erosion control, water management, and torrential stream regulation of erodible areas of SR Serbia", funded by RZNS (led by Lj. Jevtić), "Research of the efficiency and cost-effectiveness of torrential erosion control works in the area of Grdelica Gorge", funded by the Basic Community for Science, Leskovac



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and Water Management Self-government Community of South Morava Region, Vladičin Han (led by Kostadinov S.). Through comprehensive field research, these projects stressed the importance of investing in this area both from the aspect of protection and socio-economy.

The research was continued through scientific projects led by Professor Petković. These were “Research into natural conditions and technical possibilities of torrential stream regulation in SR Serbia”, financed by RZNS (1986-1990), and “Research into natural and human factors of development of soil erosion and torrential flood processes in order to control them in the area SR Serbia”, financed by RMNTS (1991-1995).

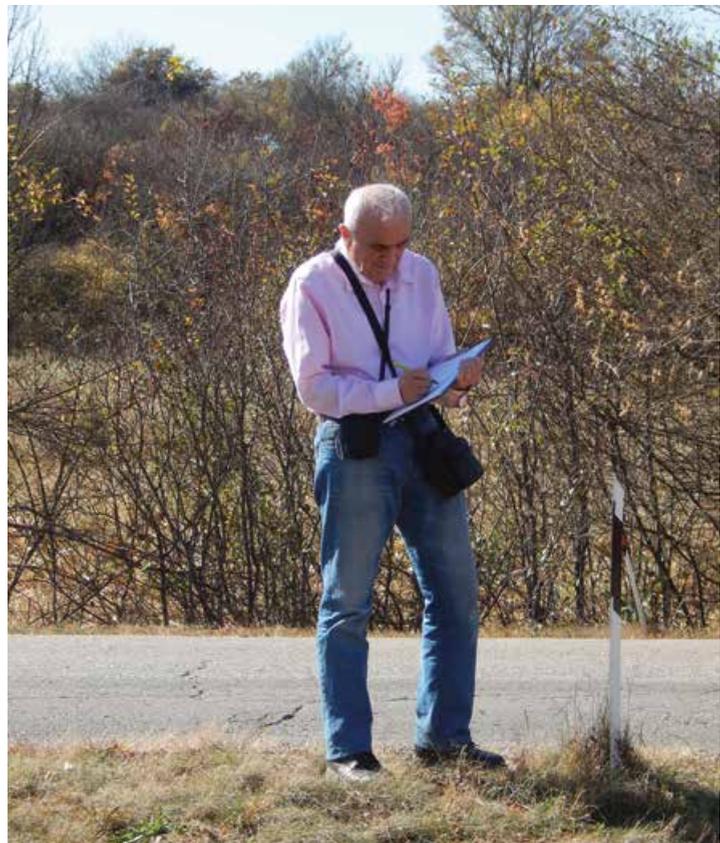
During the 1980s, twelve main designs related to the regulation of catchments and torrential streams in Serbia were produced. This period was marked by studies that dealt with the regime of water and sediment in the South Morava Basin (led by Prof. Petković S.), the flood defense of the Sejanička River (led by Prof. Petković S.), the erosion control programme with the proposal of erosion-prone areas and erosion control measures in some Belgrade municipalities (led by Prof. Kostadinov S.), sediment management in the South Morava Basin (led by Prof. Petković S.), etc.

During the 1990s, one main design (regulation of the Ribnica River) and four studies were carried out. The studies dealt with the regulation of torrential streams in the upper part of the South Morava Basin (led by Prof. Kostadinov S.), sediment management in the Morava River Basin (led by Prof. Petković S.), effects of erosion control works in the Nišava River Basin (led by Prof. Kostadinov S.), effects of the regulation of torrential streams in the Drina River Basin (led by Prof. Kostadinov S.).

Within the national water management programme (2004–2007) financed by the Ministry of Agriculture, Forestry, and Water Management of the Republic of Serbia, a study



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2 Concrete dam in the Zupska River, Stara Planina

4 Gabion check dam, Stara Planina

3 Field classes of the fourth-year students, Đavolja Varoš, 2014

5 Field research, Prof. Stanimir Kostadinov



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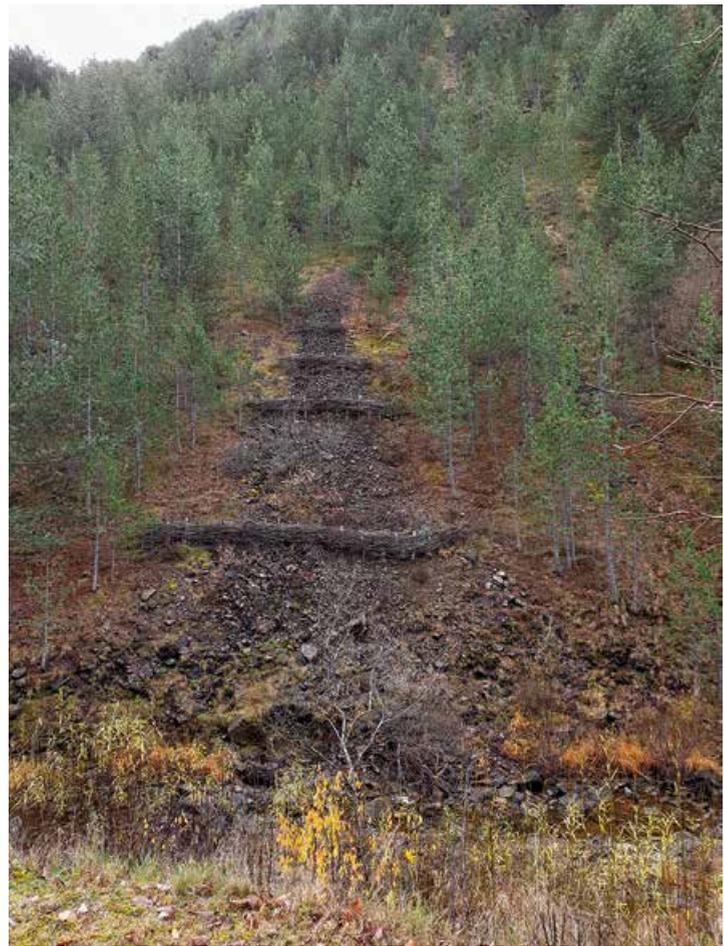
named “Water erosion control and torrent management in the function of protecting water management facilities and water quality”, was carried out for the Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia (led by Prof. Kostadinov S.).

In terms of technical implementation of the cooperation with the economy for the period 2004–2006, seven important main designs for the regulation of erosion-prone and torrential areas in Serbia were produced. They were led by Prof. Kostadinov. The first design was focused on the regulation of the Štira River Basin, and it was followed by the catchments of Jablanica, Ljubovidja, Ravanica, Grdelica Gorge, Resava, and Ravanica. These belonged to stages IV and V in the regulation of erosion-prone and torrential areas in Serbia.

The scientific research project “Effects of the revitalisation of degraded areas of Serbia” was realised in the period from 2006 to 2010. It was funded by the Ministry of Education, Science, and Technological Development (led by Dr. M. Zlatić).

In the current project cycle that started in 2011, members of the Chair have participated in the project “Climate change and its impact on the environment – impact monitoring, adaptation, and mitigation” (led by Prof. Dr. R. Kadović). In this project, the Chair of Torrent and Erosion Control manages two subprojects: Subproject 9: Frequency of torrential floods and soil and water degradation caused by climate change, up to 2019 (led by Prof. Dr. S. Kostadinov) and Subproject 16: Socio-economic development, mitigation and adaptation to climate change (led by Prof. Dr. M. Zlatić).

Regarding the implementation of international projects, it is important to note the participation of the Chair members in the “World Overview of Conservation Approaches and Technologies” (WOCAT), led by Prof. Dr. M. Zlatić for Serbia. The project was conducted in the period from 2005 to 2011.



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It was officially led by the Centre for Development and the Environment in Bern and participated by about 40 countries worldwide.

Then followed the project CBNRM – Community-based rehabilitation of degraded land in Balkan countries, funded by GEF and led by Prof. Dr. M. Zlatić. It dealt with public participation in the sustainable management of soil resources in experimental areas of Serbia, Bulgaria, Macedonia, and Turkey (2006).

Prof. S. Kostadinov led EU projects related to natural hazards: Risk/Disaster Management and Prevention of Natural Hazards in Mountainous and/ or Forested Region – RIMADIMA (2006–2008) and Practical Use of MONITORing in Natural Disaster Management – MONITOR II (2009–2012).

Professor Ratko Ristić developed the conceptual solution to protect Lake Plav from backfilling (2004), and the conceptual solution to protect Lake Biograd against erosion (2004).

From 2008 to 2010, Prof. Dr. Ratko Ristić conducted very important projects to protect ski tracks on Stara Planina, Kopaonik, Zlatibor, and Divčibare from erosion.

Professor Nada Dragović manages a very important ERASMUS project related to the curriculum development in the field of soil erosion and torrential flood prevention at the universities



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of the Western Balkans (Soil Erosion and Torrential Flood Prevention: Curriculum Development at the Universities of Western Balkan Countries). The project is ongoing until 2021.

The Chair has organised a number of international conferences: International Year of Mountains, Vrujci Spa (2002), Community Based Natural Resources Management, Belgrade (2004), WOCAT workshop in Belgrade/Predejane (2005), International Conference “Erosion and Torrent Control as a Factor in Sustainable River Basin Management”, Belgrade (2007); Land Conservation – LANDCON I, Tara (2009), LANDCON II, Donji Milanovac (2012), 3rd Conference of World Association of Soil and Water Conservation, Belgrade (2016), International conference – 1st Young Researchers' Conference– Erosion and Torrent Control (ETC 2018), Belgrade.

Both older and young staff members of the Chair are very engaged in the international frameworks. Professor Miodrag Zlatić was Director of the World Soil and Water Conservation Society from 2005 to 2010. Now, he serves as chairman of the Organising Committee of this society. Professor Nada Dragović is the national representative of this organisation for Serbia. Professor Stanimir Kostadinov was on the Board of Directors of the International Erosion Control Association



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(IECA) from 1995 to 1998, and the FAO Working Group for the regulation of hilly catchments from 1988 to 1990. Tijana Vulević, Assistant Professor, won a cash prize for the paper in the category of 10 best papers of young researchers at the WASWAC Conference. Katarina Lazarević, Teaching Assistant, served as chairman of the Organisational Committee of “1st Young Researchers' Conference – Erosion and Torrent Control ETC 2018”.

6 Professional excursion of teachers and associates of the Department and BOKU in Austria, 2010

7 Wattleling, the Kamišna River

8 Field classes with students in the Grdelica Gorge, 2007

9 Regulation of the Vrla River, Surdulica

Cooperation with other institutions

From the aspect of the financing, domestic institutions with which the Chair has established cooperation include the Ministry of Education, Science, and Technological Development of the Republic of Serbia, the Ministry of Agriculture, Forestry, and Water Management, as well as the Ministry of Environmental Protection of the Republic of Serbia. These ministries have funded scientific research projects within which a significant number of Master of Science and master's degree theses have been written as well as a number of doctoral dissertations. Good cooperation has been achieved with the "Jaroslav Černi" Institute for the Development of Water Resources and the Institute of Forestry, where many projects with the economy and scientific research projects have been carried out and several national and international conferences organised. Similar cooperation has been established with the "Jovan Cvijić" Geographical Institute. Besides, cooperation with these institutes has been valuable because they have recruited young engineers of torrent and erosion control.

Cooperation with the Faculties of Agriculture, Civil Engineering, and Geography of the University of Belgrade has had a long tradition. Cooperation with the Department of Agroecology and the Department of Soil Amelioration of the Faculty of Agriculture has been achieved through joint research in scientific projects, defense of master's theses and doctoral dissertations of candidates from both faculties, and participation in defense committees as well as the organisation of joint meetings and conferences. A long tradition of cooperation has also been achieved with the Department of Hydraulic Engineering and Water Environmental Engineering of the Faculty of Civil Engineering. This cooperation also included the realisation of exercise classes in hydro-technical courses using laboratories of this Faculty.

In terms of cooperation with foreign institutes in the field of torrent and erosion control, extraordinary cooperation has



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been achieved with the Czech Republic, Austria, France, Italy, Germany, Bulgaria, Greece, Macedonia, Switzerland, the Netherlands, China, etc. The cooperation established with the Czech Republic included professional excursions intended for master's degree students (Mendel University and the Technical University of Brno).

Cooperation with Austria refers to the cooperation with the Institute of Mountain Risk Engineering, BOKU, University in Vienna. It has been achieved through mutual visits of professors and students organised to get familiar with erosion and torrent control facilities in both countries and exchange experiences. Regarding cooperation with Italy, it has been achieved with the University of Calabria that participates in the ERASMUS project led by our Chair (Prof. N. Dragović). Cooperation connections have also been established with the German Institute of Soil Science of the Faculty of Forestry in Freiburg. In Bulgaria, cooperation has been achieved with the Faculty of Forestry and the Institute of Forestry. The Institute of Forestry in Sofia has a department that deals with erosion control and torrent management. Members of this Institute are also participants in some joint international projects (WOCAT, RIMADIMA, ERASMUS+), as well as participants and organisers of numerous joint meetings and conferences. Regarding Macedonia, our cooperation with the Faculty of Forestry in Skopje has had a long tradition and, among other things, includes joint fieldwork, defense of master's theses and doctoral dissertations of candidates from both faculties, and participation in defense committees. The Swiss Centre for Development and Environment – CDE from Bern is the coordinator of the WOCAT programme (World Overview of Conservation Approaches and Technologies) in which our Chair participates. The Institute of Soil – ISRIC from Wageningen, where one member of our Chair had professional training, is also one of the coordinators of WOCAT. Professor Zlatić was the



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coordinator of this programme for Serbia. In China, there has been outstanding cooperation with the International Research and Training Centre on Erosion and Sedimentation (IRTCES) from Beijing and the Institute of Soil and Water Conservation (SWC) from Jangling. A bilateral project relating to erosion control at the regional level has been conducted in cooperation with them.

Cooperation has also included professional training of members of this chair during study visits to institutes worldwide. Professor Stanimir Kostadinov was at the Institute of Hydraulic Engineering and Land Reclamation in Georgia, Department of Torrents in Tbilisi (1982), Faculty of Forestry in Brno, Czechoslovakia (1985,) CEMAGREF Institute (now called IRSTEA) in Grenoble, France (1988) and the Institute for Mountain Risk Engineering at BOKU University (2005). Professor Miodrag Zlatić visited the Research Institute for Soil and Water Conservation in Zbraslav in 1989. Prof. N. Dragović was on a study visit in Prague in 2005 at the Institute for Soil and Water Conservation of the Faculty of Forestry, University of Agriculture in Prague within the EU-Tempus project. Our professors have achieved outstanding cooperation with these institutions and paved the way for their younger colleagues.

Prof. N. Dragović spent the academic 1991/1992 at the Department of Torrent Research of the Federal Forest Research Centre and the academic 1995/1996 at the Institute of Avalanche and Torrent Control of the BOKU University of Vienna. In 2003, Prof. N. Dragović was granted a one-month study visit at the Faculty of Forestry in Freiburg within the FORNET project in the field of Ergonomics.

Assistant Professor Tijana Vulević made strong connections with Yangling Soil and Water Conservation Institute from China, where she was within a study visit programme in 2018.

10 Visiting an institute in China within the framework of a bilateral project

11 Professional excursion of master's degree students in the Czech Republic

12 Professional excursion of students and teachers of the Department with BOKU students and teachers in Austria, 2008



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Professor Stanimir Kostadinov cooperated with the FAO Working Group for the Regulation of Mountain Basins from 1988 to 1992. Professor Miodrag Zlatić held invited lectures at the Faculty of Forestry in Freiburg in 2005, Faculty of Landscape Architecture in Alnarp, Sweden, Faculty of Forestry in Turin in 2017, and Hohhot, China in 2019. Prof. M. Zlatić established cooperation with WASWC (World Association of Soil & Water Conservation), where he served as chairman from 2005 to 2010. He is now chairman of the Organising Committee of this organisation. Prof. M. Zlatić was on the Board of Directors of the International Soil Conservation Organisation (ISCO). For his activities, Prof. Zlatić received a special award from the World Association of Soil & Water Conservation in 2016.



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Associate Professor Mirjana Todosijević has achieved outstanding cooperation with the European Soil Data Centre – ESDAC, located in Ispra, Italy. Young teaching assistants Katarina Lazarević and Siniša Polovina, and Tijana Vulević, Assistant Professor, have been granted study visits at this Institute.

Associate Professor Vesna Đukić has also made good contacts with the Czech Faculty of Civil Engineering in Brno, where she is to give an invited lecture. She has also established good contacts with Czech colleagues regarding the modelling of hydrologic processes.

Professor Ratko Ristić was elected vice-president and a rapporteur for the Bureau coordinating the Committee on Science and Technology, under the auspices of United Nations Convention to Combat Desertification and Soil Degradation (UNCCD).

13 Prof. Zlatić, Jose Rubio (Spain), and Li Rui (China): cooperation with the Institute of Aeolian Erosion – a Gobi Desert Tour

14 WASWC Conference held in Belgrade in 2016

Selected projects

National projects and studies

- “Water erosion control and torrent management with the aim of protecting water management facilities and water quality”, Ministry of Science and Environmental Protection and the Ministry of Agriculture, Forestry, and Water Management of the Republic of Serbia, Kostadinov S. (2004–2007)
- “Torrential flood protection plan for the Belgrade area”, 16 municipalities, Faculty of Forestry and “Jaroslav Černi” Institute for the Development of Water Resources, Kostadinov S. and Stefanović M. (2005)
- “A plan for the declaration of erosion-prone areas of Belgrade area”, 16 municipalities, Faculty of Forestry and “Jaroslav Černi” Institute for the Development of Water Resources, Kostadinov S. and Stefanović M. (2005)
- “Effects of the revitalisation of degraded areas of Serbia”, Ministry of Education, Science, and Technological Development, Zlatić M. (2006–2010)
- “Research on climate change and its impact on the environment: monitoring of impacts, adaptation, and mitigation”, Ministry of Education, Science, and Technology Development, Kadović R. (2011–2019)
- “Research on socio-economic aspects of the risk caused by climate change in forest areas”, Ministry of Agriculture and Environmental Protection – Forest Directorate, Zlatić M. (2015–2016)
- “Operational plan for the torrential flood protection of second-order watercourses on the territory of the City of Kraljevo for 2012”, Faculty of Forestry, Belgrade, Ristić R. and Radić B. (2012)
- “Main design of erosion control of ski slopes in ‘Tornik’ Ski Centre on Zlatibor”, Faculty of Forestry, Belgrade, Ristić R. and Radić B. (2008)
- “Management of water and soil resources with the aim of preventing erosion processes, torrential floods, and landslides in Đerdap National Park, Faculty of Forestry, Belgrade, Ristić R. et al. (2019)
- “Research and valorisation of the area of Milićevo Brdo and the Danube River islands as potential significant natural values”, Faculty of Forestry, Belgrade, Ristić R. and Radić B. (2013)
- “A new technology of afforestation of sloping terrains”, Faculty of Forestry, Belgrade, Ristić R. et al. (2006)
- “A study of integrated regulation of the Topčiderska River catchment in the aim of sustainable management of natural resources – phase 1: Documentation plan”, Water Directorate, City Secretariat for Utilities and Housing Services, Belgrade, Dragović N. et al. (2008)

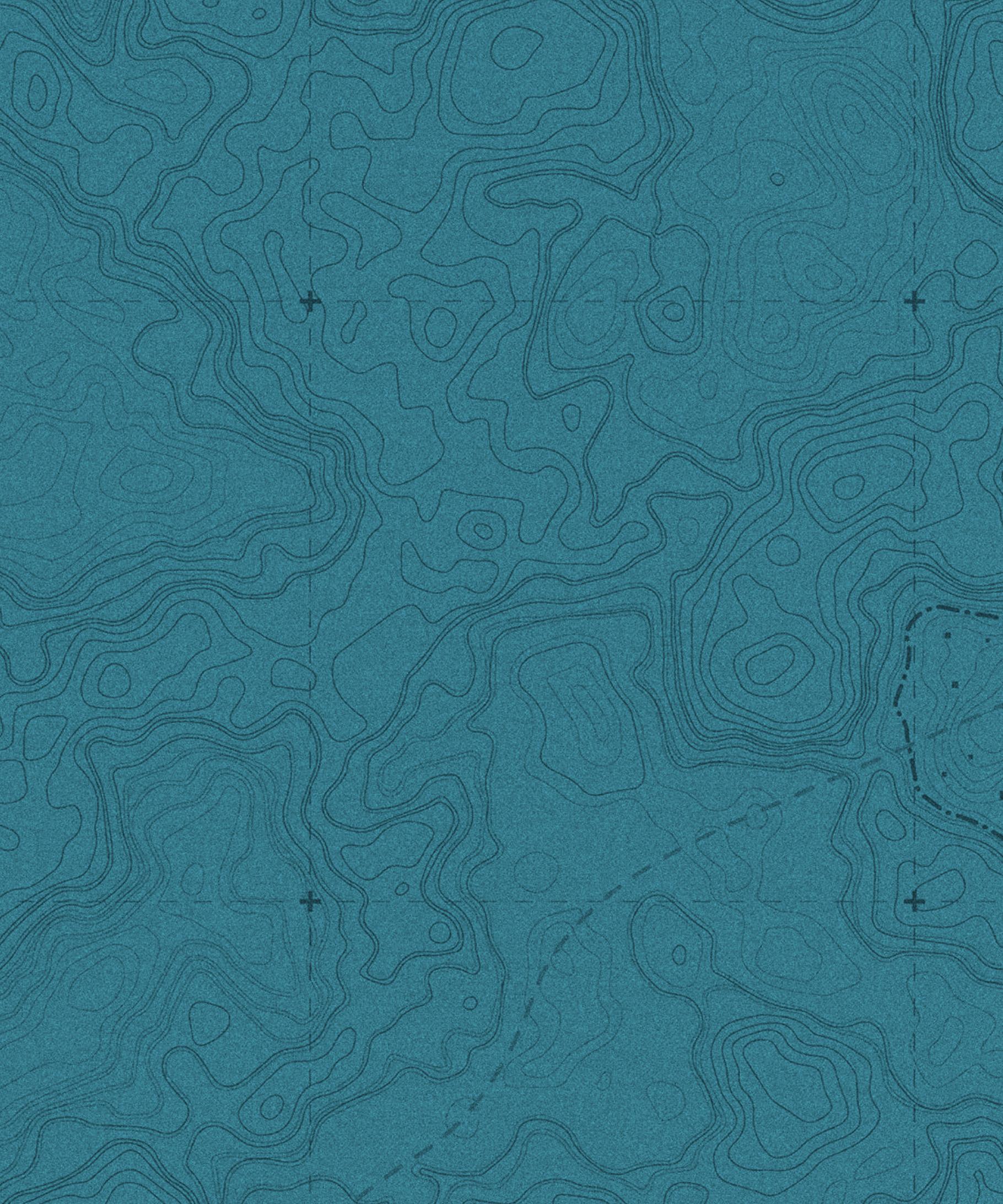
International projects

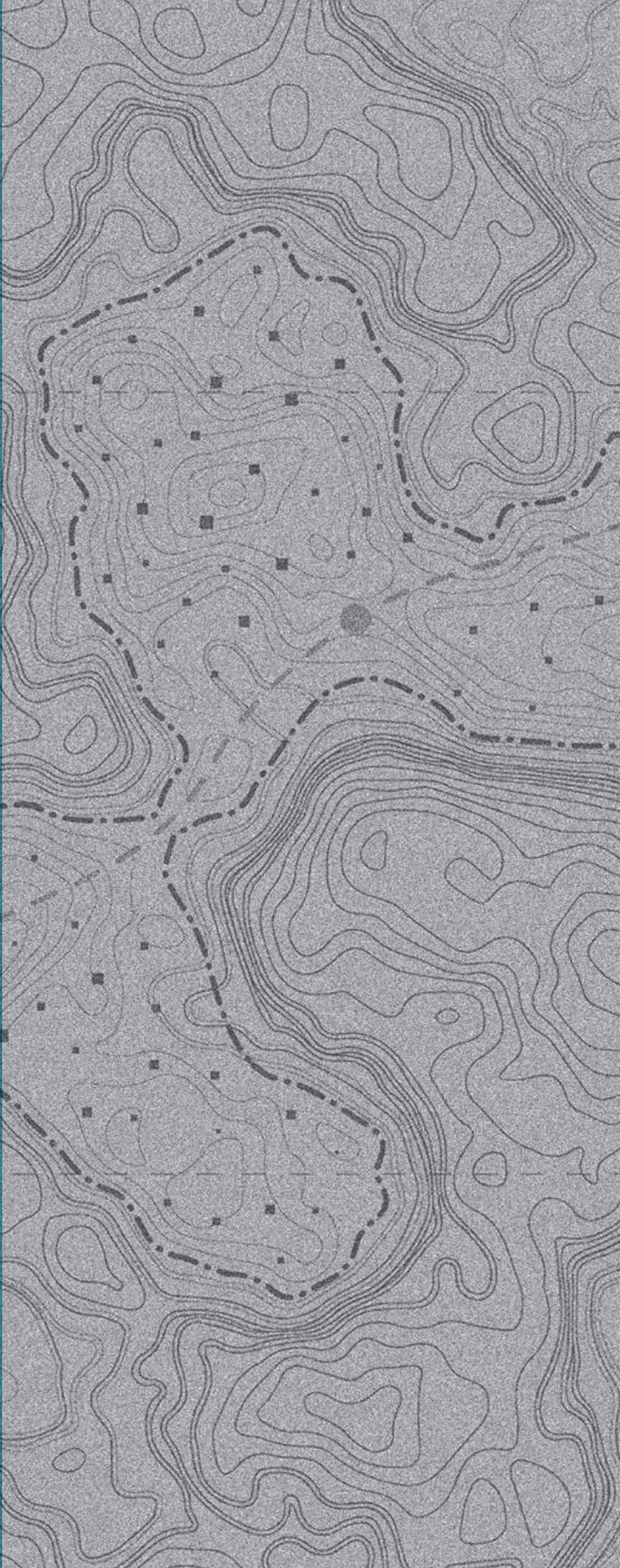
- “World Overview of Conservation Approaches and Technologies – WOCAT”, organised and funded partly by CDE/ Bern, and partly by the Ministry of Agriculture, Forestry, and Water Management, led by Miodrag Zlatić (2005–2011)
- “Community-based rehabilitation of degraded land in Balkan countries”, GEF/UNEP Project Development Facility Block-A (PDF-A), led by Miodrag Zlatić (2006)
- “Risk/ disaster management & prevention of natural hazards in mountainous and forested regions – RIMADIMA”, an international project funded by the EU, (INTERREG-III-B, CADSES), led by Stanimir Kostadinov (2006–2008)
- “Practical use of monitoring in natural disaster management – MONITOR II”, an international project funded by the EU, South East Europe Transnational Cooperation Programme, manager for Serbia – Stanimir Kostadinov (2009–2012)
- “Assessment of integrated impacts of soil and water conservation at the regional level”, a scientific and technological cooperation programme between the Republic of Serbia and the People’s Republic of China, led by Miodrag Zlatić and Li Rui (2011–2013)
- “Main design of facilities to stop sediment in water flows of Bistrička Reka, Šerički Potok, and Ograjina – the Bosna River catchment”, University of Belgrade Faculty of Forestry, Institute of Civil Engineering Banja Luka, led by Ratko Ristić (2016)
- “Natural resources management in the framework of the environment protection policies and sustainable rural development in the Western Balkans (FWRM)”, led by Ristić R. and Dragović N. (2016–2017)
- “ERASMUS + programme: Soil erosion and torrential flood prevention: curriculum development at the universities of Western Balkan countries”, led by Nada Dragović (2018–2021)

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CHAIR OF SOIL AMELIORATION

Text drawn up by:
Dr. Sara Lukić, Associate Professor

Brief history

The Chair of Soil Amelioration has existed since the establishment of the Faculty of Forestry of the University of Belgrade and as an organisational unit since 1949. The Chair was founded by Eng. Prof. Sreten Rosić, who was also the first dean of the Faculty of Forestry after the Faculty of Forestry had separated from the Faculty of Agriculture.

According to the 1988 Statute, the following courses were developed at the Chair: Forest Soil Amelioration, Agricultural Soil Amelioration (currently Soil Amelioration), Forest Hydrology, Erosion Control Agroecosystems (currently Soil Conservation), Forest Water Use, and Forest and the Environment. Several generations of professors at the Chair of Soil Amelioration have included Sreten Rosić, Radomir Lujić, Zora Lazarević, Velizar Velasević, Miroljub Đorović, Stevan Dožić, Ratko Kadović, Grigorije Macan, Ljubomir Letić, Snežana Belanović Simić, Sara Lukić, Branislava Mihajlović, Jelena Beloica, Vesna Nikolić Jokanović, and Predrag Miljković, as well as associates Nenad Stojkov, Nevenka Topalović, and Mirjana Maletin and laboratory technicians Milan Marjanov and Gordana Backić. MSc Nenad Stojkov, MSc Nevenka Topalović, MSc Mirjana Maletin, and Grad. Eng. Branislava Mihajlović were also engaged as teaching assistants for some time.

Since its establishment, over 300 students have graduated, and over 30 master's degree theses, 25 Master of Science theses and 20 doctoral dissertations have been defended at the Chair of Soil Amelioration.

In the current accredited undergraduate study programme of the Department of Ecological Engineering for Soil and Water Resources Protection, the following courses of the Chair have the status of compulsory courses: Forest Soil Amelioration, Soil Amelioration, Forest Water Use, and Soil Conservation.

The Chair teaching staff members teach the following elective courses: Soil Physics, Air Pollution and Forest Soils,

CHAIR STAFF:

Teaching staff

Dr. Snežana Belanović Simić,
Full Professor

Dr. Sara Lukić,
Associate Professor,
Head of Chair

Dr. Jelena Beloica,
Assistant Professor

Dr. Vesna Nikolić Jokanović,
Assistant Professor

MEng Predrag Miljković,
Teaching Assistant

Higher Education Associates

Grad. Eng. Branislava Mihajlović,
Higher Education Associate

Tailings Reclamation, and Soil and Bioengineering Techniques. Forest Hydrology is taught as an elective course in the undergraduate studies of the Department of Forestry.

Besides undergraduate studies, our teachers teach in master's degree and doctoral studies. The master's degree study programme of ecological engineering for soil and water resources protection, Module 2 – *Degradation and Protection of Soil Resources* includes three compulsory courses (Soil and Water Degradation and Global Changes, Forest Hydrology, and Agroforestry Systems) and 2 electives (Environmental Effects of Forest Amelioration Works, and Soil Chemistry and the Environment).

Within the master's degree studies in forestry, Module 2 – *Use of Forest and Hunting Resources*, Forest Water Use is taught as an elective course.

Teachers of the Chair participate in doctoral studies teaching the following courses: Methodology of Scientific Research Work, Phytoremediation, Pollution, Soil Quality and Protection, and Hydrologic and Psamologic Effects of Erosion Control Works.



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Today, the Laboratory for Soil Quality Monitoring is active at the Chair of Soil Amelioration. In collaboration with other laboratories of the Faculty, it performs analyses of soil, sediments, and plant material, primarily to define soil and sediment quality. The laboratory is equipped with the latest equipment both for teaching and the analyses conducted within intensive studies of soil, sediments, and plant material. The head of the laboratory is Prof. Dr. Snežana Belanović Simić.

There is also the Centre for Terrestrial Ecosystem Critical Load Assessment (TECLA), where members of the Chair perform their professional activities. The TECLA Centre is managed by Dr. Jelena Beloica, Assistant Professor.

The large number of students who have completed their master's degree, Master of Science, and doctoral studies at the Chair included several students from abroad: Amadu Majga (1980), Kolubali Koulutan (1980), Emhemed A. Daw (2012), and Yousef Mansour Ali Bohajar (2016).

1 Prof. Eng. Sreten Rosić
in the field

2 A visit to a water management
company in Niš in 1970

Scientific research and professional activity

Many years' work of the Chair of Soil Amelioration has resulted in a whole series of important projects funded by ministries and economic organisations. These projects have produced significant results so that once individual scientific research work has become interdisciplinary and multidisciplinary.

Diverse projects of the Chair of Soil Amelioration deal with soils of forest ecosystems and agroecosystems, habitats of varying degrees of degradation with often extreme environmental conditions, measures and techniques of amelioration of degraded habitats and selection of species for afforestation, biological land reclamation of mine spoil banks, forest shelterbelts and their role in aeolian and water erosion control, irrigation and drainage as soil amelioration measures in agroecosystems. Furthermore, the Chair deals with aquatic ecosystems (water as a biotope), their revitalisation and renaturalisation.

In the last five years, the research in the fields studied at the Chair is aimed at:

- determining the state of the soil, degree of soil pollution, physical and chemical soil degradation, soil quality, sediment quality, soil and water degradation caused by global changes;
- research of ameliorative effects of biological erosion control measures and biological reclamation in erosion control and improvement of environmental conditions;
- research of the impact of air pollution on natural ecosystems;
- research of the impact of water regime on habitats of hygrophilous species in the flood plains of large rivers;
- monitoring of groundwater in forest areas;
- aeolian erosion.

The research of natural resources conducted at the Chair has stressed the necessity and importance of more complex studies of soil and water (as biotopes) to obtain more relevant formulations of ecosystem processes, develop comprehensive databases, and further develop and apply the models thus obtained.

The results of research conducted at the Chair of Amelioration are available in the form of published papers, reports and databases. The results are also available in the form of reports, studies and projects carried out in cooperation with economic entities.

From 1978 to 1989, within the programme of scientific research activities aimed at protecting and improving nature and the human environment of SR Serbia, the Chair conducted studies of ecosystem disturbances and environmental degradation. This project involved several scientific research and economic institutions. The Faculty of Forestry was the holder of the project with Prof. Dr. Velizar Velašević as responsible coordinator.

Then, the period from 1991 to 2001 was marked by the project dealing with forest ecosystems from the aspect of the impact of air pollution on forest ecosystems, their importance for the conservation of basic natural resources in Serbia and the improvement of their protective and regulatory functions.

In the period from 1998 to 2002, Prof. Dr. Miroljub Đorović, as an expert of the FAO organisation, was hired by UNEP, MAP, PAP as a scientific coordinator of the international project entitled: "Measurement and mapping of erosion processes in the Mediterranean coastal zone".

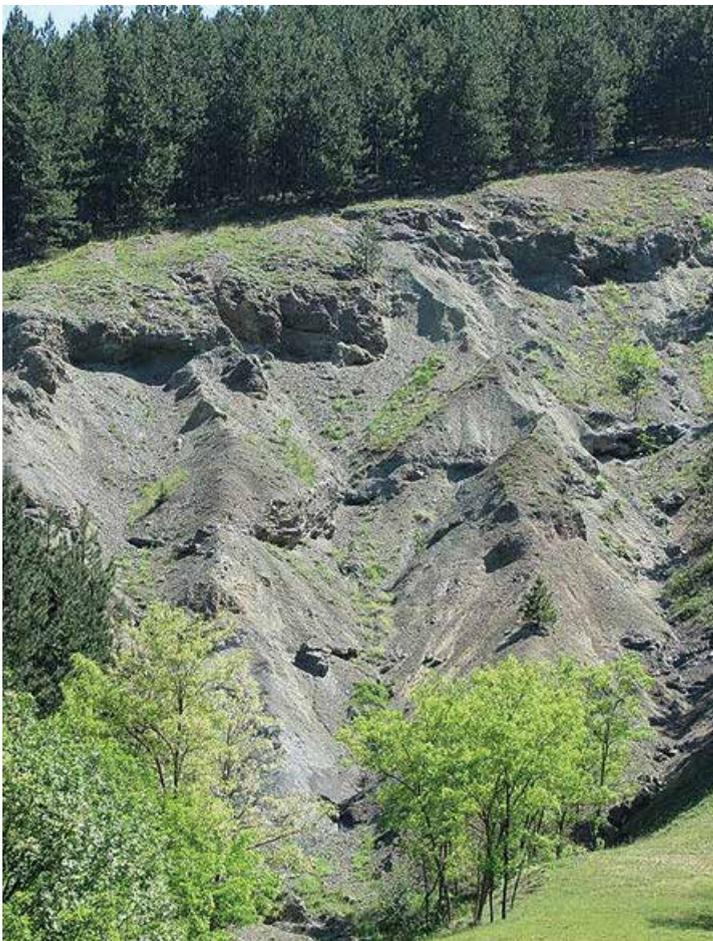
After 2001, scientific research was divided into two groups of projects: national programme projects and technological development projects. The projects in the field of technological development research were directed at solving current issues



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3 Field research as preparation for environmental restoration, Lake Palić (2019)

4 Biological reclamation in the area of MB "Majdanpek" (2009)

5 Impact of canopy opening and removal of vegetation on soil degradation in the basin of the Žunjska River

6 A shelterbelt in the area of Bavanište (2003)



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of degradation control and mitigation of its consequences in order to increase the production, economic effects, and theoretical and practical foundations for the improvement of the state of forests and forest plantations.

In the period from 2008 to 2010, the Chair conducted the technological development project entitled “Improvement in the technology of forest shelterbelt establishment”, led by Prof. Dr. Stevan Dožić.

In the project cycle of 2011–2019, members of the Chair participated in the implementation of the project “Climate change and its impact on the environment – monitoring of impacts, adaptation, and mitigation” led by Prof. Dr. Ratko Kadović, and “Sustainable management of the total forest potentials in the Republic of Serbia” led by Prof. Dr. Milan Medarević. In the past period of its existence and work, the Chair of Soil Amelioration has achieved intensive cooperation with the economy through the engagement of teachers and associates on its promotion. In the professional sense, numerous projects, studies, and expertise have been done at this chair to address the needs of the economy, institutions, and domestic enterprises. Professors and associates of the Chair of Soil Amelioration have been participants or leaders of numerous projects in the field of environmental protection and management of the degradation caused by erosion processes.

On the other hand, the companies have provided field courses for students and data necessary for the preparation of graduation papers and master’s degree theses at the Chair.

Since its establishment, teachers and associates of this chair have published several hundreds of scientific and professional papers in domestic and international journals and proceedings of domestic and international conferences. Of that number, 20 papers have been published in SCI journals. Members of the Chair have published numerous publications



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intended not only for members of the scientific communities but also students and assistant practitioners. In the past twenty years, the Chair has published eight monographs, five coursebooks, two practice books, and two chapters in international monographs.

7 MB Kolubara
– Medojevac viewpoint,
field classes (2018)

8 Students participating
in the afforestation on
Fruška Gora (2019)



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9 Monitoring the impact of air pollution, Kopaonik Level II sample plot (2019)

10 Shelterbelt in the area of Čelarevo (2018)

11 A silvopastoral system on Mt. Zlatar (2015)

12 Students of the Department of Ecological Engineering for Soil and Water Resources Protection planting a shelterbelt around a landfill near Pančevo (2012)

Cooperation with other institutions

Domestic institutions and organisations with which the Chair has had cooperation through implementation of projects and development of strategies primarily include the Ministry of Education, Science, and Technology Development of the Republic of Serbia and the Ministry of Environmental Protection of the Republic of Serbia. Other institutions with which strong cooperation has been achieved are the Institute for Soil Science, “Siniša Stanković” Institute for Biological Research, Institute for Field and Vegetable Crops from Novi Sad, etc.

Members of the Chair have also established cooperation with institutions worldwide, primarily through personal training courses and project participation. Professor Dr. Velizar Velašević was a member of the Council of the Forestry Journal (Šumarski List). Professor Dr. Miroljub Đorović has successfully cooperated with international organisations, such as FAO and IUFRO, where he actively participated in many working bodies. In FAO/EFC organisation, he served as chairman of the Group for the Regulation of Mountain Basins from 1984 to 1988. He was also the chairman and vice-chairman of the IUFRO Soil Erosion Group (S1-04-04) from 1984 to 1990. The Spanish daily “SUR Malaga” of 9 October 1991 wrote about the importance of the professional engagement and lectures of Prof. Dr. Miroljub Đorović.

Professor Dr. Stevan Dožić spent a year in Czechoslovakia at the Faculty of Forestry in Brno while preparing his doctoral dissertation. There, he built up valuable contacts and paved the way for his colleagues to share knowledge and experiences with this institution. Prof. Dr. Stevan Dožić was engaged as a lecturer at the Faculty of Forestry in Ljubljana from 1985 to 1991. In 1987, Professor Dr. Ljubomir Letić spent a month at the Institute for Forest Hydrology HFV – Hann. Munden, in Essen. Since 2010, the Chair has cooperated with the James Hutton Institute in Aberdeen, where Prof. Dr. Snežana Belanović Simić



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completed the specialisation. Dr. Jelena Beloica stayed in Italy from May to November 2014 within the framework of the bilateral cooperation “Sciences for DIPLOMAzia: Management and Usage of agrifood resources with the aim of fostering sustainable agriculture and forestry as well as reduction of the effects of climate change”.

This cooperation has brought many awards to the members of the Chair of Soil Amelioration. Professor Dr. Miroljub Đorović was awarded the UN Peace Medal for his contribution to world peace. Also, due to the contribution of Prof. Dr. Miroljub Đorović to the field of soil erosion at the international level, his biography was featured in the international ABI (USA) edition “Who’s Who in the 20th Century” of 1998. Furthermore, thanks to his international contribution to the field of soil and water conservation, the biography of Prof. Đorović was also included in the Seventh Edition of “5000 Personalities of the World” of the ABI Institute and the IBC – Cambridge edition “2000 Prominent Intellectuals in the 20th Century”. Prof. Dr. Miroljub Đorović was also enlisted in the First Edition of “Who’s Who in the Balkans” and “Who’s Who in Serbia” in 1995. Prof. Dr. Snežana Belanović Simić was enlisted in Oxford’s book “Successful People of Serbia” in 2017.

13 Representatives of Yugoslavia in IUFRO and FAO sessions in the field soil erosion in 1991 in Spain, Torremolinos – Prof. Dr. Velizar Velašević and Prof. Dr. Miroljub Đorović

Selected projects

National projects and studies

- “The service of testing the soil degradation caused by the spillage of “Stolice” mine spoil bank”, (2018), led by Prof. Dr. Snežana Belanović Simić.
- “Research on climate change and its impact on the environment – monitoring of impacts, adaptation, and mitigation” (reg. no. III43007), (2011–2019), led by Prof. Dr. Ratko Kadović.
- “Carbon stocks in the soils of meadow ecosystems in the highland regions of Serbia”, (2015), led by Prof. Dr. Snežana Belanović Simić.
- “Impact of soil ameliorative works on the site of pedunculate oak in Ravni Srem”, (2015), led by Prof. Dr. Ljubomir Letić.
- “Research of groundwater levels in the area of FE Sremska Mitrovica”, (2015 – ongoing), led by Prof. Dr. Ljubomir Letić.
- “Research of groundwater levels in the area of FE Sombor” (2015 – ongoing), led by Prof. Dr. Ljubomir Letić.
- “Soil monitoring – the current state of soil quality in the flooded areas of the Kolubara River”, (2013), led by Dr. Snežana Belanović Simić.
- “Investigation of the impact of groundwater on the occurrence of forest dieback”, (2012–2013), led by Prof. Dr. Ljubomir Letić.
- “Technological Development Project – Improvement in the technology of forest shelterbelt establishment” (reg. no. BT 20118), (2008–2010), led by Prof. Dr. Stevan Dožić.
- “Level II intensive monitoring on Kopaonik, (2010)”, a research task – Organisation of the Level II sample plot – NP *Kopaonik*” led by Dr. Snežana Belanović.



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International projects

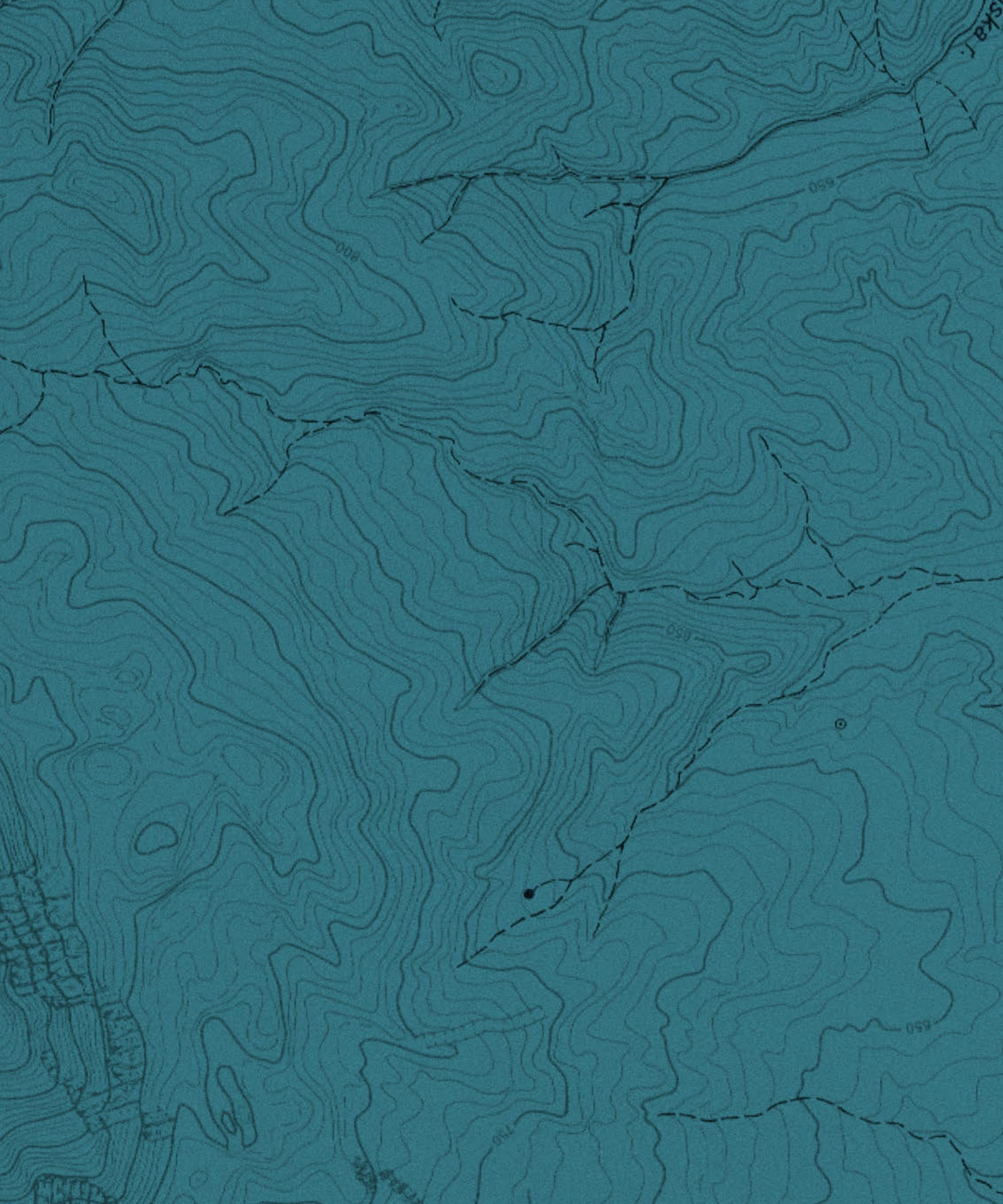
- “General Master Plan for Transport in Serbia – Final report” (2009), Environmentalist, coordinator of a part of the research team: Dr. Snežana Belanović Simić (project manager Enrico Maglia).

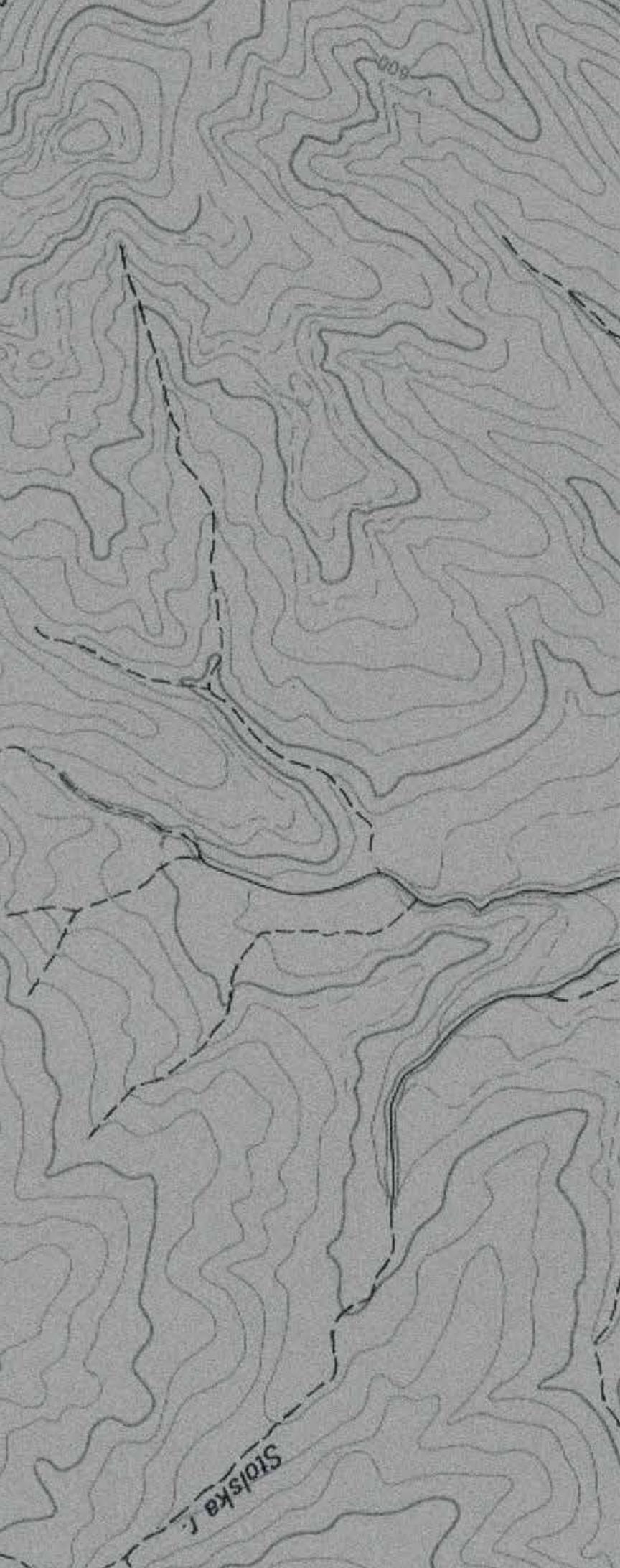
14 International Symposium
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CHAIR OF EROSION CONTROL GEOTECHNICS

Text drawn up by:
Dr. Zoran Nikić, Full Professor

Brief history

The establishment of the Chair of Erosion Control Geotechnics was initiated by Dr. Tiosav Todorović, Full Professor, in 1997. Prof. Todorović was Head of the Chair from its founding to his retirement in 2006. The Chair was established to address the need for forestry engineer graduates with the knowledge and skills required in the design and construction of torrent and erosion control facilities. From its very beginning, the Chair has focused its activities on studying physical and mechanical properties of soil, the mechanism of erosion processes, impacts of underground water on landslide and erosion development, materials in erosion control works, and specific conditions related to the design and construction of torrent and erosion control facilities. The first generation of teachers of the Chair, besides Prof. Dr. Todorović, included Prof. Dr. Slavko Božilović, Prof. Dr. Dušan Babac, and Prof. Dr. Vjačeslava Matić. The second generation of teachers at the Chair comprised Dr. Grozdana Gajić, Full Professor, and Dr. Zoran Nikić, Full Professor. The third and youngest generation included Dr. Nenad Marić, Assistant Professor, and MEng Nikola Živanović, Teaching Assistant.

During the first and part of the second generation of teachers, a significant contribution in the field of cooperation with the economy and the work of the Laboratory was given by MSc Gradimir Stanojević, Grad. Eng., and Gradimir Živojinović, technician.

The teaching process of the Chair was at some time assisted by Pavle Babac, Graduate Engineer, and Vaso Mrvaljević, Graduate Engineer.

Since its founding, the Chair has been in charge of the following courses: Fundamentals of Geotechnics in Torrent Control, Hydrogeology with Geomorphology, Materials in Erosion Control Works, Hydraulics with Hydrology, and Organisation of

CHAIR STAFF:

Teaching staff

Dr. Zoran Nikić,
Full Professor, Head of Chair

Dr. Grozdana Gajić,
Full Professor

Dr. Nenad Marić,
Assistant Professor

MEng Nikola Živanović,
Teaching Assistant

Construction and Mechanisation in Erosion Control Works. In 2002, elective courses were introduced – Soil Physics of Erodible Areas and Geodynamics and Landslide Rehabilitation.

By decision of the Teaching-Scientific Council, the Chair introduced a postgraduate study programme of Erosion Control Geotechnics in 1998. Postgraduate studies were organised in two modules – Torrent Hydraulics with Hydrology and Erosion Control Geotechnics, with the following courses: Fundamentals of Geotechnics, Hydraulics with Hydrology, and Hydrogeology with Geomorphology. By decision of the Teaching-Scientific Council of 2000, postgraduate studies were organised in only one module – Erosion Control Geotechnics.

Since 2006, the Chair of Erosion Control Geotechnics has been teaching the following compulsory courses of the undergraduate studies: Fundamentals of Geotechnics in Torrent Control, Basics of Hydrogeology, Applied Geomorphology, Materials in Erosion Control Works, and an elective course in Borrow Pits and Material Reserves. Since 2008, the compulsory courses of the Chair have been Erosion Control Geotechnics, Hydrogeology with Geomorphology, Materials in Erosion Control Works, and an elective course in Borrow Pits and Material Reserves.

Besides the undergraduate studies, the Chair has courses in master's degree and doctoral studies. Since 2014, the master's degree study programme has had the following elective courses belonging to the Chair: Protection and Ecological Use of the Water from Phraetic Sources, Landslide Rehabilitation, and Borrow Pits and Material Reserves. Elective courses of the Chair



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at the doctoral studies are Interaction between the Soil Water from Phreatic Sources, Physical-Mechanical Soil Erodibility Indicators, and Methods of Soil Monitoring in Erosion and Torrential Processes.

There is one laboratory and one centre at the Chair. These are the Geotechnical Laboratory and the Centre for Groundwaters of Forest Ecosystems. The Geotechnical Laboratory was founded by Professor Dr. Tiosav Todorović in 1997, at the same time the Chair was established. The Laboratory performs testing of physical and mechanical soil properties with the aim of defining erodibility.

The Centre for Groundwaters of Forest Ecosystems was founded in 2016 by Professor Dr. Zoran Nikić. The main goal of the Centre is to promote and apply modern approaches and measures in studying the role of phreatic aquifer water in the functioning of forest ecosystems, the role of groundwater in erosion processes, and its importance in landscape architecture and horticulture. The Laboratory and the Centre are used for the professional activities of members of the Chair and co-operation with the economy.

From its establishment in 1997 until 30 September 2019, about 50 students graduated from undergraduate studies, 18 students completed master's degree studies, four students obtained a Master of Science degree, and two students became doctors of science. Dissertation defense committees were participated by researchers of the Institute of Forestry of Belgrade and teachers of the University in Belgrade – Faculty of Mining and Geology and Faculty of Civil Engineering.



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1 Field classes in Hydrogeology – reading the groundwater measurements from the datalogger of the piezometer installed in the Arboretum of the Faculty of Forestry in Belgrade

2 Field classes in Geomorphology – accumulation type waterfall (Stanjinac) and tufa deposits (Eastern Serbia)

Scientific research and professional activity

The priorities of the Chair of Erosion Control Geotechnics are scientific and practical study and definition of the methods of ecological engineering necessary for the protection of soil against erosion and protection and role of phreatic water in forest ecosystems. Scientific research activity at the Chair is carried out according to individual disciplines. It can be roughly divided into the research on ecosystems and their vulnerability to erosion processes and the research into the role of phreatic groundwater in ecosystems.

The work produced by staff members of the Chair can be divided into several scientific groups: slope and hillside stability, landslide rehabilitation, physical properties of soil and correlation with erosion processes, internal erosion, soil physics of forest ecosystems, consolidation and stabilisation, environmental problems, protection, reclamation and revitalisation, systems research and mathematical modeling approach, morphological development of river flows, mechanism of erosion development, application of modern materials in the construction of torrent and erosion control facilities.

The study of groundwater from phreatic sources focuses on the research of the protection against erosion – impacts of groundwater on engineering soil properties, slope stability, and erosion processes, formation and rehabilitation of landslides, the use, protection, and monitoring of groundwater of phreatic sources, the mutual relationship of groundwater and river surface water, drainage and irrigation using groundwater to improve water characteristics of soils, the role of the phreatic aquifer for the conservation and improvement of forest ecosystems. The study of erosion-prone areas from the aspect of geomorphological and topographical characteristics refers to the mechanisms of development of exogenous and endogenous processes. Special attention is paid to the mechanisms of proluvial, deluvial, fluvial, aeolian, glacial, karst, and marine process development, their erosion and accumulation forms,

the determination and genetic classification of relief forms, terrain forms that are significant from the aspect of geodynamic stability, determination of hazard zones and attractive forms of geodiversity.

In recent times, knowledge of geological and engineering materials that are used in the construction of torrent dams, embankments, and bank revetments has gained importance. Besides the characteristics of natural geological building materials (stone, crushed stone, gravel, sand, clay) and the opening of their local borrow pits, attention has also been paid to various aggregates obtained from separations, gravel pits, and crushed gravel pits.

Teachers of the Chair have been members of organisational and scientific committees of domestic and international conferences and committees for the defense of master's degree theses and doctoral dissertations at the Faculty of Mining and Geology, University of Belgrade, and the Faculty for Applied Ecology – Futura, University of Singidunum.

Another aspect of the professional work at the Chair refers to the participation of its teachers in the republic committees and working groups: Working group to determine and verify groundwater reserves on the territory of the Republic Serbia, Working group to determine and verify groundwater reserves, hydrogeothermal and petrogenic resources in the Republic of Serbia, Expert working group for Serbia's accession to the ratification process of the UN Convention to combat desertification and the Expert Council of PE Electric Power Industry of Serbia for capital investments in the period from 2000 to 2008.



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3 Terrain mapping

4 Experimental field research

5 Building a retaining wall made of final elements

6 Shoring up a dam – Goč Teaching Base



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Thanks to good cooperation with the economy, some companies also provide facilities for field teaching, preparation of graduation papers and master's theses and training of assistants and associates of the Chair in specific scientific disciplines.

Numerous activities and rich experience of teachers and associates have resulted in a great number of scientific and professional papers, monographs, and other scientific publications. Since its foundation, teachers and associates of this chair have published about 400 scientific and professional papers in domestic and international journals and proceedings of domestic and international conferences. Of that number, 25 papers have been published in SCI journals. Furthermore, the teachers of this chair have published six chapters in international monographs, two monographs, four university course-books, and three practice books.

Further development of the Chair will go in several directions: influence of the biological component on slope stability; the role of groundwater in the development of erosion processes; the importance of phreatic aquifers in preserving and achieving vitality of forest ecosystems; mechanism of erosion process development in forest areas; application of materials to improve physical and mechanical soil properties, the application of modern materials in the construction of facilities; protection from phreatic waters in the field of biotechnical disciplines in erosion-prone areas and forest ecosystems with the aim of drainage, irrigation and rehabilitation of slope processes, environmental impact, landfill remediation and the use of renewable energy resources; characteristics of borrow pits and reserves of various natural building materials for the construction of check dams, dams, streambank revetments, etc.



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Cooperation with other institutions

Regarding domestic institutions and organisations in the past 22 years, we must stress the cooperation with the Ministry of Education, Science, and Technological Development of the Republic of Serbia and the Secretariat for Environmental Protection of the City of Belgrade realised through projects and studies. Other institutions with which strong cooperation has been established include the Institute of Chemistry and Technology of the Faculty of Technology, University of Belgrade, the Institute of Mining in Belgrade, the Faculty of Chemistry of the University of Belgrade, the former Institute of Geology and Geological Service, the Institute for Hydrogeology and Engineering Geology, currently known as the Serbian Geological Institute.

Intensive and fruitful cooperation with numerous institutions and organisations has enriched our staff with valuable knowledge and experiences. They have motivated them to keep raising the standards of their scientific and professional work. For that reason, nurturing and expanding cooperation has remained their permanent orientation.

7 Proluvial geomorphological process
– the development of ravines in
dilapidated marls, Visok Kraj

8 Glacial and colluvial
geomorphological process
– erosion and accumulation
forms, Mt. Maglič,
Trnovačko Lake

9 Geological construction materials
– a wall assembled from roughly
processed sandstone,
the village of Dojkinci

Selected projects

In the past period, the Chair has achieved intensive cooperation with the economy through the work of teachers and associates in its promotion. In the professional sense, for the needs of the economy, numerous institutions, and domestic organisations, over 400 projects and studies have been done at the Chair. Out of this number, over 25 projects and professional studies have been realised within the framework of international cooperation and over 100 projects and studies in the framework of cooperation at the national level.

National projects and studies

- “Justification of selective excavation and disposal of overburden (Phase II), Selective excavation and disposal of overburden in the function of reclamation of surface coal mines (Phases I and II)” – Directorate for Strategy and Investments, Faculty of Mining and Geology, University of Belgrade, (2005–2006), Faculty of Forestry, project participant, Dr. Grozdana Gajić, project leader at the Faculty of Forestry.
- “Technology of the production of functional planting material for afforestation of degraded terrains”, Ministry of Science and Technology, (2008–2011), led by Dr. Grozdana Gajić.
- “Influence of geological and hydrogeological conditions on the occurrence of destructive erosion processes and torrential floods on the territory of Serbia”, Ministry of Science and Technological Development of the Republic of Serbia, Belgrade, (2010–2011), led by Dr. Zoran Nikić.
- “New biological materials for the protection of soil and water”, Ministry of Science and Technological Development of the Republic of Serbia, Belgrade, (2011–2017), led by Dr. Vjačeslava Matić.
- “Geological and ecotoxicological research in the identification of geopathogenic zones of toxic elements in drinking water reservoirs – research methods and procedures for reducing the impact of biogeochemical anomalies”, Ministry of Science and Technological Development of the Republic of Serbia, (2011–2016), Faculty of Forestry, project participant, Dr. Zoran Nikić, project manager at the Faculty of Forestry.
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- “Geotechnical conditions and measures for the rehabilitation of unstable slopes and erosion processes at the building site of *Victory* complex in the city of Sochi, Russia”, at the level of the General Plan, led by Dr. Grozdana Gajić. (1997)

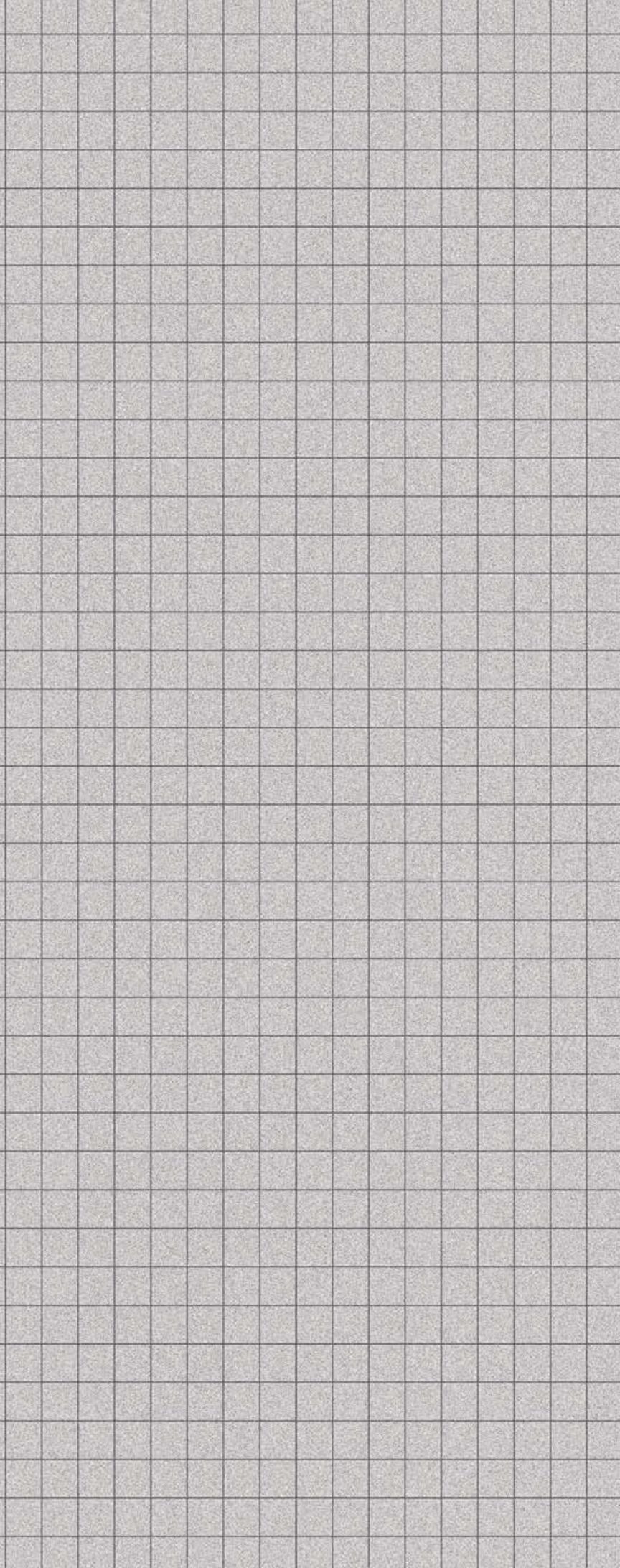
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- “Elaborate on the results of geotechnical erosion control research for the needs of site remediation of Petkovica Monastery – Šišatovac”, led by Dr. Grozdana Gajić. (2015)
- “Elaborate hydrogeological research to consider the possibilities and conditions of capturing groundwater for irrigation of the Arboretum of the Faculty of Forestry in Belgrade”, Secretariat for Environmental Protection of the City of Belgrade, led by Dr. Zoran Nikić (2017)

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CHAIR OF GENERAL SUBJECTS

Text drawn up by:
Dr. Slobodanka Mitrović, Full Professor

Brief history

The Chair of General Subjects has existed since the establishment of the Faculty. Till 2019, it belonged to the Department of Forestry, although teachers of the Chair of General Subjects have always been engaged in teaching at all four departments. By the new Statute of the Faculty of Forestry adopted in 2019, the Chair of General Subjects became an independent organisational unit. In the previous work, the Chair included, besides Mathematics and Foreign Languages, a large number of general subjects, such as Sociology, Statistics, Descriptive Geometry, and National Defense. They were either transferred to other chairs of the Faculty of Forestry or abolished. Today, the Chair of General Subjects is in charge of Mathematics, Mathematics with Statistics, Statistics in the Analysis of Natural Resources, and Foreign Languages (English, Russian, French, and German) in undergraduate academic studies and Scientific Research Techniques and Scientific Research Methodology in doctoral studies.

Since its establishment, several generations of excellent teachers, teaching assistants, and lecturers have participated in the work of the Chair. A significant contribution to the work of the Faculty of Agriculture and Forestry was given by Dr. Anton Bilimović, a full member of the Serbian Academy of Sciences and Arts from 1936. He taught Mathematics and Mechanics before the Second World War, starting in 1920. As the first manager of the Institute of Mathematics of SASA, Anton Bilimović was a founder of the *Publication de l'Institut Journal of Mathematics and Mechanics* in 1932. As a Russian born in Ukraine, this world-famous scientist published 80 papers, coursebooks, and monographs and translated the famous *Euclidean Elements* from ancient Greek into Serbian.

After the Second World War, the first-generation teachers of Mathematics at the Faculty of Forestry were Prof. Dr. Đorđe Karapandžić (from 1950) and prof. Dr. Ratko Timotijević (from 1948)

CHAIR STAFF:

Teaching staff

Dr. Slobodanka Mitrović,
Full Professor, Head of Chair

Dr. Smiljana Jakšić,
Assistant Professor

Master Prof. Dragana Ilić,
Foreign Language Teacher

Dr. Katarina Lazić,
Assistant Professor

Lecturers from other institutions

Dr. Kornelija Ičin,
Full Professor (Russian)
The Faculty of Philology,
University of Belgrade

MA Maša Polillo,
Lecturer (German)
The College of Tourism in Belgrade

Grad.Prof. Sandra Ilić Đorđević,
Foreign Language Teacher (French)
The Faculty of Agriculture,
University of Belgrade

who got a doctoral degree at this faculty in 1965. They both taught Higher Mathematics, and a coursebook under the same title written by professor Karapandžić was the only teaching tool for many years.

The second generation of Mathematics teachers at the Faculty of Forestry (from 1979) had two teachers – Prof. Dr. Jovan Malešević and Dr. Miodrag Trifunović. Professor Malešević was oriented towards the theoretical approach to the course in Mathematics. Thus he failed to tailor it to the needs of the students of the Faculty of Forestry. On the other hand, Professor Trifunović was oriented towards the practical problems of the profession that he solved using differential equations. Yet, his immeasurable contribution was in the field of the history of mathematics. He is one of the first compilers of the collected works of our great scientists Mihailo Petrović Alas and Milutin Milanković.

He also gave a significant contribution to the History of Mathematics in Serbia.

Since the 1980s, the third, current generation has included Dr. Slobodanka Mitrović, Full Professor, and Dr. Smiljana Jakšić, Assistant Professor (since 2009). For the past 40 years, first as a teaching assistant from 1980, and then as a teacher since 1989, Prof. Dr. Slobodanka Mitrović has successfully trained generations of students of the Faculty of Forestry in Basics of Higher Mathematics, striving to present complex mathematical knowledge as something more than a monotonous range of axioms and theorems and constantly stressing the practical fields where these mathematical concepts can be applied. He is the author of two coursebooks and two workbooks. The coursebook *Mathematics for students of biotechnical faculties*, published in 1997, contains numerous examples of mathematical problem-solving in biotechnology. It successfully filled the gap that appeared in the teaching literature after Dr. Đorđe Karapandžić had retired. With her fair and impartial attitude to students and understanding of their needs for the minimum scope of the subject, Professor Dr. Slobodanka Mitrović has succeeded, as an excellent lecturer in Mathematics and Statistics, to maintain the quality of lectures set up by previous professors of Mathematics. On two occasions, at the beginning of the 21st century, she was engaged in teaching Mathematics at the Faculty of Electrical Engineering in Belgrade. As a longtime head of the Chair of General Subjects of the Faculty of Forestry, she has established successful cooperation of its members with other chairs of the Faculty.

At some points, mainly during the work of the second and third generations of mathematicians of the Faculty of Forestry, mathematicians MSc Mirjana Tičarić, Dr. Mira Isaković, and MSc Vesna Šešum participated in the teaching process as teaching assistants. They continued their work as lecturers at other faculties at home or abroad.

Foreign Language as a course at the Faculty of Forestry was introduced in 1950. The first lecturers were Đorđević Marija and Rakić Vera (German), Ilić Vera (English), Tasić Borivoje (French), and Leonila Černozubova (Russian and French). Tasić Borivoje was the author of the first French language coursebook at the Faculty of Forestry. It was published in 1961 and included a dictionary of forest-related words and expressions. Leonila Černozubova published the first professional Russian-Serbo-Croatian dictionary for students of forestry faculties in 1969.

Successful work of the first generation of foreign language teachers at the Faculty of Forestry was continued by Mirjana Pekić (from 1976) teaching Russian, Dr. Perović Veroslava (from 1990) teaching French, and MA Ana Tonić (from 1980) teaching English. This generation of lecturers built up the Foreign Language course as an LSP course. They actively collected authentic texts from the narrow professional fields of forestry, landscape architecture, wood industry, and water management and

created or adapted vocabulary and grammar exercises to suit the above professions. MA Ana Tonić was the author of the first comprehensive collection of authentic and adapted ESP texts selected to meet the needs of different educational profiles of the Faculty of Forestry. It was published in 1989 and used as teaching material for many years. The most notable outcome of her translation work is an English-Serbian, Serbian-English dictionary of forestry-related terms. It was published by the Association of Forestry Engineers and Technicians in 2011.

At the end of the last century, the teaching staff of the Cabinet for foreign languages at the Faculty of Forestry, besides MA Ana Tonić, included MA Zlatko Krasni for German, MA Branka Stanković for Russian, and MA Dobrila Ristić Kadijević for French. The German language teacher and Head of the Cabinet MA Zlatko Krasni was a prominent Serbian writer of Czech origin. He was a poet, anthologist, essayist, and critic. He was a member of the Association of Writers of Serbia from 1983 and the Association of Literary Translators of Serbia. His poetry has been translated into many languages and published in many domestic and foreign anthologies and journals. He was the editor of several journals, including an international literary journal – Pannonia, Vienna. He wrote about books, writers, and cultural events in our country and acquainted the German and Central European readership with the work of numerous Serbian writers. He wrote 13 books of poetry, several books of essays, reviews, critiques, and numerous anthologies. After his death, at the initiative of Peter Handke, the event known as Smederevo Poetry Autumn established the Zlatko Krasni award for translation in 2011.

Today, English is taught at the Faculty of Forestry by Master Prof. Dragana Ilić and Dr. Katarina Lazić, Assistant Professor, and before 2018, Ljiljana Knežević prof. spec. Other foreign languages are taught by teachers employed at other higher education institutions – Dr. Kornelija Ičin, Full Professor of Russian at the Faculty of Philology, Sandra Ilić Đorđević, graduate professor of French at the Faculty of Agriculture and Maša Polillo, German language lecturer at the College of Tourism in Belgrade (before her, Dr. Ljiljana Glišović, Associate Professor of German at the Faculty of Political Science).

Although the courses in Sociology and Socialist Self-Government are not courses of the Chair of General Subjects any more, we should mention Professors Dr. Živko Marković and Dr. Vesna Rakočević, who were its members from 1979 to the late 1990s.

Besides the teaching staff, the technical support was provided by Slaviša Šarenac, Graduate Forest Engineer and Branislav Miladinović, Laboratory Technician for a long time. Today, there are no technicians or laboratory technicians at the Chair.

Scientific research and professional activity

Although the courses of the Chair of General Subjects do not belong to the narrow fields of scientific research of the Faculty of Forestry, its scientific and research activities have always been tailored to the needs of professional disciplines studied at the Faculty of Forestry. These activities have primarily referred to the practical application of mathematical and statistical knowledge and extensive translation work. On the other hand, they have also included the professional development of its members in mathematics and philology. Teachers of mathematics and foreign languages had to pass all the steps necessary for their promotion at the parent faculties, which inevitably included scientific research in the fields not related to the scientific disciplines of the Faculty of Forestry. Since its establishment, Mathematics teachers and teaching assistants have published a large number of scientific and professional papers in domestic and international journals and proceedings of domestic and international conferences. Thanks to the current digitisation of scientific research, the papers published by our Chair staff members can be found on the website of the National Library of Serbia, within COBISS and personal bibliographies.

Besides the papers related purely to mathematics, after spending a year (academic 1990/1991) in America (IREX scholarship), working on the mathematical models for biological growth functions, Professor Dr. Slobodanka Mitrović published several papers related to forestry, independently or in collaboration with well-known forestry experts. To achieve the goal of the course in Mathematics at the Faculty of Forestry – to introduce the basics of Higher Mathematics, including data preparation, functional dependency testing, calculating the area and volume of shapes and figures in plane and space, mathematical models for simple processes in nature and their solutions, Dr. Slobodanka Mitrović has published



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two excellent coursebooks for the students of the Faculty of Forestry: *Mathematics for students of biotechnical faculties* and *Biostatistics – application of statistical methods in biology* (in collaboration with Dr. Srđan Bojović), and two mathematics workbooks, one for the preparation of mathematics for faculty admission, and another for the preparation of mathematics for the Faculty of Forestry entrance exam.

Her workbook for preparing the faculty entrance exam in mathematics has had eleven editions since 1994. For many years, it was used at mathematics and technical faculties where the entrance exam was performed at the University of Belgrade level. Biostatistics, published in 2010, which represents a good starting point for adoption and implementation of statistical methods, has been included as a compulsory coursebook for the course in Scientific Research Techniques at doctoral studies and Statistics in undergraduate studies of the Faculty of Forestry.

Foreign language teaching at the Faculty of Forestry focuses on developing communicative competence in the scientific disciplines studied at the Faculty of Forestry. The course in English for Specific Purposes chosen by the majority of students is an intermediate learner-centred course designed to meet the specific needs of the students. It is related in content (topics) to the narrow scientific disciplines of the four departments. To achieve these goals, foreign language teachers apply the latest language learning strategies and methods, and use diverse audio and visual materials and educational applications. English and Russian, as the most commonly chosen languages, are covered by coursebook literature.

Dragana Ilić is the author of a coursebook for students of the Department of Landscape Architecture and the Department of Wood Technology and Science, and Ljiljana Knežević for students of the other two departments, the Department of



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Forestry and the Department of Ecological Engineering, while the students who continue to learn the Russian language use the coursebook written by Dr. Kornelija Ičin. It should certainly be noted that for the past 70 years, fruitful cooperation of the Faculty of Forestry with numerous domestic and international institutions and organisations has been developed with the help and participation of the language teachers of the Chair.



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3 Dr. Slobodanka Mitrović as a member of the Committee for the defense of doctoral dissertation of Damjan Pantić (2003)

4 Dr. Katarina Lazić with the colleague Dr. Mirjana Šijačić-Nikolić and a delegation from Finland

1 Dr. Slobodanka Mitrović teaching Mathematics

2 Dr. Slobodanka Mitrović as a member of the Committee for the defense of doctoral dissertation of Ratko Ristić (2000)

5 Dragana Ilić, English language teacher with the colleague Ksenija Đokić from Berlitz Language Centre at ELT Conference TEB Days, Reach exceeding grasp, Teach enhancing class (Belgrade, 2019)



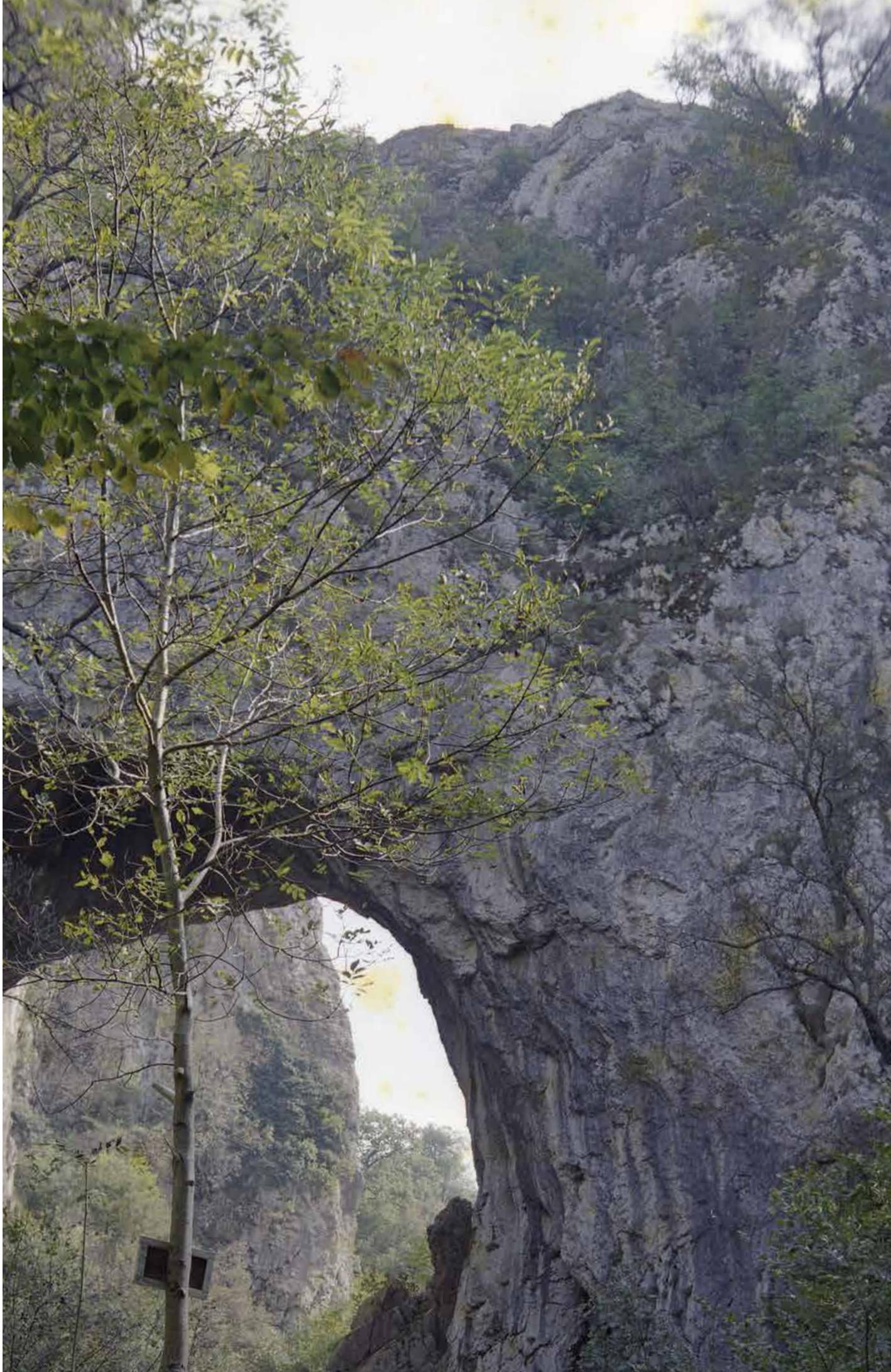
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Summary

The University of Belgrade – Faculty of Forestry is a higher education and scientific research institution with a hundred-year-long tradition. The beginnings of work at the Faculty are related to the Faculty of Agriculture in Zemun, where in the year 1920/21 the first generation of 45 students enrolled in the Faculty, of which 36 in the Department of Agriculture and 9 in the Department of Forestry. Classes began on December 5, 1920, and every year this date is celebrated as the Faculty Day.

By the Decree of the Government of the People's Republic of Serbia of February 5, 1949, the Faculty of Forestry became an independent higher education institution, whose first dean was engineer Sreten Rosić.

By the decision of the People's Committee of Belgrade of April 2, 1953, the Faculty was given an unfinished building in Banovo Brdo, together with about a 10-hectare yard. In late 1954 and early 1955, the Faculty moved into the new building. Due to the lack of space, the building was extended and rearranged several times during the past period.

The first Statute of the Faculty of Forestry was passed on October 1, 1956, and two departments were formed: the Department of Forestry and the Wood-Industrial Department. In the following period, the number of departments changed, and in 1966 the Faculty consisted of 4 departments, including the Department of Forestry, the Department of Wood Industry, the Department of Horticulture and the Department of Erosion and Soil Amelioration, which still exist today. According to the last 2019 Statute, there are four departments at the Faculty of Forestry, including the Department of Forestry, the Department of Wood Science and Technologies, the Department of Landscape Architecture and the Department of Ecological Engineering in the Protection of Soil and Water Resources.

The same Statute defines the current organisational structure, manner of work, management and administration of the

Faculty, as well as the bodies of the Faculty. According to the data from September 2020, the number of employees at the Faculty and its teaching bases is 298, of whom 110 are teachers and associates.

In 2006, influenced by contemporary global changes and requirements in higher education the University of Belgrade began with the introduction of the "Bologna Process", as a modern system that relies on a greater degree of flexibility, the need for complementarity and harmonisation with faculties of similar educational and scientific profile, as well as a greater degree of engagement and mobility of students during the teaching process. Studies are organised at three levels: the undergraduate academic studies (4 years), the master's degree academic studies (1 year) and doctoral studies (3 years). This 4 + 1 + 3 system of study is still valid today.

So far, more than 10,000 students have graduated from the Faculty, and 435 Master of Science theses, 658 Master's theses and 346 Doctoral dissertations have been completed and defended at this Faculty.

The competence of the Faculty is ensured by the accreditation of study plans and programmes and the accreditation of the Faculty as a scientific research institution. In the academic year 2006/07, the first generation of students enrolled in the studies at the Faculty in accordance with the Bologna process, and in 2008 the Faculty received its first certificate of accreditation as a higher education institution.

By the 2020 decision of the Ministry of Education, Science and Technological Development, the Faculty was re-accredited as a state scientific research institution in the field of biotechnical sciences - agriculture, forestry and fisheries. Scientific research at the Faculty is performed by 124 researchers, through individual activities or activities of project teams, which deal with fundamental, applied and development research in the

field of forestry, wood technologies, landscape architecture and ecological engineering in the protection of soil and water resources. The basis for scientific research is a significant number of laboratories and centres formed at the Faculty of Forestry in the past period.

Establishing, nurturing and developing cooperation with other universities in the country and abroad, as well as with international institutions and organizations dealing with scientific research and higher education issues, has been and remains a permanent commitment of the Faculty of Forestry. This is evidenced by numerous agreements of cooperation concluded with partners from a large number of countries, on the basis of which take place the exchange of students, teachers, acquired knowledge and experience and joint participation in projects.

The Faculty has a library space which is organised in three segments: a working space for librarians with a professors' reading room, a student study room with 50 seats and a warehouse space of over 200 m² in which a rich library collection is located. The Faculty can also boast of abundant publishing with a long tradition.

The Faculty is the manager of three important spatial units: the "Goč" teaching base (3,731 ha), the "Majdanpečka Domena" teaching base (2,078 ha) and the Arboretum in the Faculty yard (6.7 ha). The main purpose of the teaching bases is to enable field teaching, practical lessons and scientific research of students and employees. In addition, the Faculty manages three protected natural areas, as an authorised guardian: the "Goč-Gvozdac" special nature reserve, the "Felješana" strict nature reserve (15.28 ha) and the "Arboretum of the Faculty of Forestry", which is a natural monument.

The organising of students at the Faculty of Forestry is as old as the Faculty itself. The Association of Students of the Faculty of Forestry in Belgrade was founded on December 4, 1923,

and until then the students operated through the Association of Agricultural Students. The dominant organisational form of student activity at the University of Belgrade-Faculty of Forestry is the Student Parliament, as well as numerous sections. In addition to that, the students have their elected representatives and through them they participate in the work of the Faculty Council and the Teaching-Scientific Council.

Извод

Шумарски факултет Универзитета у Београду представља високообразовну и научноистраживачку институцију са традицијом дугом 100 година. Почети рада Факултета везани су за Пољопривредни факултет у Земуну, на који је у прву генерацију, у школској 1920/21. години, уписано 45 студената, од којих 36 на Пољопривредни, а 9 на Шумарски одсек. Настава је почела 5. децембра 1920. године и сваке године се овај датум обележава као Дан Факултета.

Уредбом Владе НР Србије од 5. фебруара 1949. године, Шумарски факултет постаје самостална високошколска установа чији је први декан био инж. Сретен Росић.

Одлуком Народног одбора Београда од 2. априла 1953. године, Факултету је додељена недовршена зграда на Бановом Брду, заједно са окућницом величине око 10 хектара. Пресељење у нову зграду обављено је крајем 1954. и почетком 1955. године. Услед недостатка простора, зграда је дограђивана и преуређивана током протеклог периода.

Први Статут Шумарског факултета донет је 1. октобра 1956. године, којим су формирана два одсека: Шумарски и Дрвно-индустријски. У наредном периоду број одсека се мењао, да би 1966. године Факултет чинила 4 одсека: Одсек за шумарство, Одсек за дрвну индустрију, Одсек за хортикултуру и Одсек за ерозију и мелиорације, који и данас постоје. Према последњем Статуту из 2019. године на Шумарском факултету постоје четири одсека: Одсек за шумарство, Одсек за технологије дрвета, Одсек за пејзажну архитектуру и Одсек за еколошки инжењеринг у заштити земљишних и водних ресурса.

Истим Статутом дефинисана је и тренутна организациона структура, начин рада, управљање и руковођење Факултетом, као и органи Факултета. Према подацима из септембра 2020. године број запослених на Факултету са наставним базама је 298, од чега 110 наставника и сарадника.

Под утицајем савремених глобалних промена и захтева у високошколском образовању, Универзитет у Београду, 2006. године почиње са увођењем „Болоњског процеса“, као савременог система који се ослања на већи степен флексибилности, на потребу комплементарности и хармонизације са факултетима сличног образовног и научноистраживачког профила, као и на већи степен ангажованости и мобилности студената током одвијања процеса наставе. Студије се организују на три нивоа: основне академске студије (4 године), мастер академске студије (1 година) и докторске студије (3 године). Овај систем студирања, 4+1+3, важи и данас.

До сада је на Факултету дипломирало више од 10.000 студената, израђено је и одбрањено 435 магистарских радова, 658 мастер радова и 346 докторских дисертација.

Компетентност Факултета обезбеђује се акредитацијом студијских планова и програма и акредитацијом Факултета као научноистраживачке институције. Прву генерацију студената по Болоњском систему Факултет је уписао школске 2006/07. године, да би 2008. године добио прво уверење о акредитацији високошколске установе.

Одлуком Министарства просвете, науке и технолошког развоја из 2020. године Факултет је поново акредитован као државна научноистраживачка институција у области биотехничких наука – пољопривреда, шумарство и рибарство. Научноистраживачки рад реализује 124 истраживача, кроз индивидуалне активности или активности пројектних тимова, који се баве фундаменталним, примењеним и развојним истраживањима из области шумарства, технологија дрвета, пејзажне архитектуре и еколошког инжењеринга у заштити земљишних и водних ресурса. Основу за научноистраживачки рад чини значајан број лабораторија и центара који су формиран на Шумарском факултету у протеклом периоду.

Успостављање, неговање и развијање сарадње са другим универзитетима у земљи и иностранству, као и са међународним институцијама и организацијама које се баве научноистраживачким радом и високошколским питањима, било је и остало трајно опредељење Шумарског факултета. О томе сведоче многобројни споразуми о сарадњи закључени са партнерима из великог броја земаља, на основу којих се остварује размена студената и наставника, стечених знања и искустава, као и заједничко учешће у пројектима.

Факултет поседује библиотечки простор који је организован у три сегмента: радни простор за запослене у библиотеци са професорском читаоницом, студентску читаоницу са 50 места и магацински простор од преко 200 m² у који је смештен значајан библиотечког фонда. Факултет се може похвалити богатом издавачком делатношћу са дугом традицијом.

Факултет управља са три значајне просторне целинаме: Наставном базом „Гоч“ (3.731 ha), Наставном базом „Мајданпечка домена“ (2.078 ha) и Арборетумом на окућници Факултета (6,7 ha). Основна намена наставних база огледа се у реализацији теренске, практичне наставе и научноистраживачких активности студената и запослених. Такође, Факултет управља и трима заштићеним природним подручјима, као овлашћени старалац: Специјалним резерватом природе „Гоч–Гвоздац“, Строгим резерватом природе „Фељешана“ (15,28 ha) и Спомеником природе „Арборетум Шумарског факултета“.

Студентско организовање на Шумарском факултету егзистира колико и сам Факултет. Удружење студената београдског Шумарског факултета основано је 04.12.1923. године, који су до тада деловали кроз Удружење студената пољопривреде. Доминантну организациону форму

активности студентата на Шумарском факултету Универзитета у Београду представља Студентски парламент, као и бројне секције. Такође, студенти су заступљени, преко изабраних представника, и у раду Савета факултета и Наставно-научног Већа.

Резюме

Факультет леса Белградского университета – высшее учебное и научно-исследовательское учреждение со столетней традицией. Факультет начинал работать в составе Сельскохозяйственного факультета в городе Земуне (сегодня часть Белграда), куда в 1920/1921 учебном году поступило первое поколение студентов. Из 45 студентов 36 поступило на сельскохозяйственное отделение, 9 – на отделение лесоводства. Учебный процесс начался 5 декабря 1920 года и с этого момента эта дата отмечается как день Факультета.

По указу Правительства Народной Республики Сербии от 5 февраля 1949 года Факультет леса становится самостоятельным высшим учебным заведением, первым деканом которого назначен инженер Сретен Росич.

2 апреля 1953 года Народный комитет Белграда принял решение о выделении для Факультета леса незаконченного здания в районе Баново брдо вместе с прилегающей площадью в 10 га. Переезд в новое здание состоялся в конце 1954 – начале 1955 года. Нехватка помещений привела к тому, что в течение последующих лет здание факультета достраивалось и перестраивалось.

Первый устав Факультета леса принят 1 октября 1956 года. Тогда сформированы два отделения: лесоводства и промышленной обработки дерева. В дальнейшем число отделений менялось, чтобы в 1966 году на Факультете леса окончательно утвердились 4 отделения: отделение лесоводства, отделение промышленной обработки дерева, отделение ландшафтной архитектуры и отделение эрозии и мелиорации, существующие по сей день. Согласно новейшему уставу Факультета 2019 года, на Факультете леса существуют четыре отделения: отделение лесоводства, отделение технологий древесины, отделение ландшафтной архитектуры и отделение экологической инженерии в охране земель и водных ресурсов.

Уставом утверждены также настоящая организационная структура факультета, план работы, способы управления Факультетом, факультетские органы. По данным на сентябрь 2020 года общее число работающих на Факультете и его учебных базах составляет 298 человек, 110 из них – это преподаватели и сотрудники.

Под влиянием современных глобальных перемен и требований в высшем образовании Белградский университет в 2006 году начал вводить «Болонский процесс», как современную систему, опирающуюся на высокий уровень флексибильности, на необходимость взаимодополняемости и согласованности с факультетами со схожей образовательной и научно-исследовательской деятельностью, а также на большую степень трудоспособности и мобильности студентов во время учебного процесса. Обучение организовано на трех уровнях: основное академическое обучение (4 года), мастер академическое обучение (год) и аспирантура, или докторское обучение (3 года). Данная система обучения (4+1+3) действительно и на сегодняшний день.

До сих пор Факультет леса выпустил более 10.000 студентов, на Факультете защищено 658 магистерских работ, 435 кандидатских диссертаций и 346 докторских диссертаций.

Компетентность Факультета обеспечивают аккредитация учебных планов и программ, а также аккредитация Факультета как научно-исследовательского учреждения. Первое поколение студентов по Болонской системе записалось на Факультет в 2006/2007 году, тогда как аккредитацию как высшее учебное заведение Факультет получил в 2008 году.

Решением Министерства образования, науки и технологического развития от 2020 года Факультет также получил аккредитацию как государственное научно-исследовательское учреждение в области биотехнических наук – сельского хозяйства, лесоводства и рыбного хозяйства.

Научно-исследовательскую работу осуществляют 124 исследователя в рамках индивидуальных активностей или активностей команд, сплоченных вокруг проектов, посвященных фундаментальным и прикладным исследованиям в области лесоводства, технологий древесины, ландшафтной архитектуры и экологической инженерии. Основу научно-исследовательской работы составляет значительное число лабораторий и центров, организованных на Факультете леса в предыдущий период.

Налаживание, забота и развитие сотрудничества с другими университетами в стране и за рубежом, а также с международными учреждениями и организациями, которые занимаются научно-исследовательской работой и вопросами высшего образования, являются неизменным приоритетом Факультета леса. Об этом свидетельствуют многочисленные подписанные с партнерами из разных стран договоры о сотрудничестве, на основании которых осуществляется обмен студентами и преподавателями, а также обмен знаниями и опытом, совместное участие в проектах.

На Факультете действует и библиотека, подразделенная на три части: рабочее пространство для библиотекарей с читальным залом для преподавателей, студенческий читальный зал на 50 мест и склад 200 м², в котором помещается библиотечный фонд. Факультет гордится богатой издательской деятельностью с долгой традицией.

Факультет располагает тремя территориальными единицами: учебной базой «Гоч» (3.731га), учебной базой «Майданпекское лесное хозяйство» (2.078 га) и Дендрарием в саду Факультета леса (6,7 га). Основное назначение учебных баз – проведение практики и научно-исследовательской работы студентов и сотрудников Факультета. К тому же, под опекой Факультета находятся три

природных заповедника: «Гоч – Гвоздац», «Фелешина» (15,28 га) и «Дендрарий Факультета леса».

Студенческие организации на Факультете леса существуют с самого его основания. Союз студентов белградского Факультета леса основан 4 декабря 1923 года. До этой даты студенты действовали в рамках Союза студентов сельского хозяйства. Основная организационная форма деятельности студентов Факультета леса Белградского университета – это Студенческий парламент и ряд кружков. Добавим, что студенты через выбранных представителей участвуют в работе Совета факультета и Научно-преподавательских заседаний.

Auszug

Forstwissenschaftliche Fakultät der Universität in Belgrad stellt eine Hochschul-, Wissenschafts- und Forschungsinstitution mit 100-jähriger Tradition. Anfänge der Arbeit der Fakultät sind mit der Landwirtschaftsfakultät in Zemun verbunden, an der in der ersten Generation im Schuljahr 1920/21 45 Studenten eingeschrieben wurden, davon 36 auf Lehrstuhl für Landwirtschaft und 9 auf Lehrstuhl für Forstwissenschaft. Der Unterricht hat am 05. Dezember 1920 angefangen und jedes Jahr wird dieses Datum als Tag der Fakultät gefeiert.

Mit der Regierungsregelung der Volksrepublik Serbien vom 05. Februar 1949, Forstwissenschaftliche Fakultät wird zur unabhängigen Hochschulinstitution, deren erster Dekan Ingenieur Sreten Rosić war, ernannt.

Mit dem Bescheid des Volksausschusses Belgrad, vom 02. April 1953, der Fakultät wurde das unvollendete Gebäude auf Banovo Brdo zugeteilt, zusammen mit dem Hofland von 10ha Größe. Der Umzug in das neue Gebäude wurde Ende 1954, Anfang 1955 vollzogen. Wegen dem Platzmangel wurde an dem Gebäude in den vergangenen Jahren zusätzlich umgebaut und das Gebäude wurde erweitert.

Das erste Statut der Forstwissenschaftlichen Fakultät wurde am 01. Oktober 1956 gegründet, mit dem zwei Lehrstühle entstanden: Forstwirtschaft und Holz-industrielles Lehrstuhl. Im nächsten Zeitraum wurde die Zahl der Lehrstühle verändert und im Jahr 1966 bekam die Fakultät 4 Lehrstühle: Lehrstuhl für Forstwirtschaft, Lehrstuhl für Holzindustrie, Lehrstuhl für Hortikultur und Lehrstuhl für Erosion und Melioration, die auch heute vorhanden sind. Nach dem letzten Statut aus dem Jahr 2019, auf der Forstwissenschaftlichen Fakultät bestehen vier Lehrstühle: Lehrstuhl für Forstwirtschaft, Lehrstuhl für Holztechnologie, Lehrstuhl für Landwirtschaftliche Hortikultur und Lehrstuhl für Ökologisches Engineering und Landwirtschaft- und Gewässerschutz.

Mit dem gleichen Statut wurde auch jetzige Organisationsstruktur definiert, Arbeitsart und Fakultätsführung, sowie Fakultätsorgane. Nach den Angaben vom September 2020, die Zahl der Beschäftigten an der Fakultät mit Unterrichtsbasen beträgt 298, davon 110 Lehrer und Mitarbeiter.

Durch den Einfluss zeitgenössischer, globaler Wechsel und Forderungen in der Hochschulbildung, Universität in Belgrad beginnt in dem Jahr 2006 mit der Einführung des „Bologna Prozesses“, als modernen System, das sich an höheren Grad der Flexibilität, Bedürfnis der Komplementarität und Harmonisierung mit den Fakultäten ähnlichen Bildungs- und Forschungsprofils anlehnt, sowie an höheres Grad des Engagements und der Mobilität der Studenten während der Durchführung des Unterrichtsprozesses. Das Studium wird in drei Niveaus organisiert: akademisches Grundstudium (4 Jahre), akademisches Masterstudium (1 Jahr) und Doktorstudium (3 Jahre). Dieses Studiensystem, 4+1+3 ist bis heute gültig.

Bis jetzt haben an der Fakultät mehr als 10000 Studenten ihr Diplom gemacht, es wurden 435 Magisterarbeiten gemacht und verteidigt, 658 Masterarbeiten und 346 Promotionsarbeiten durchgeführt.

Die Kompetenz der Fakultät wird durch die Akkreditierung von Studienplänen und Programmen gesichert, sowie durch die Akkreditierung der Fakultät als wissenschaftliche Forschungsinstitution. Die erste Generation der Studenten nach dem Bologna System hat die Fakultät im Studienjahr 2006/07 eingeschrieben und im Jahr 2008, die erste Bescheinigung über die Akkreditierung der Hochschulinstitution gekriegt.

Durch den Bescheid des Ministeriums für Bildung, Wissenschaft und technologische Entwicklung aus dem Jahr 2020, die Fakultät hat wieder die Akkreditierung als staatliche, wissenschaftliche Forschungsinstitution aus dem Bereich der Biotechnologischen Wissenschaften – Landwirtschaft, Forstwirtschaft

und Fischen gekriegt. Mit wissenschaftlicher Forschungsarbeit beschäftigen sich 124 Forscher durch individuelle Aktivitäten oder Aktivitäten aus Projektarbeiten in den Projektteams, die sich mit Fundamentalen-, Angewendeten und Entwicklungsforschung aus dem Gebiet der Forstwissenschaft, Holztechnologie, Landwirtschaftlicher Architektur und ökologischem Engineering in dem Landwirtschaft- und Gewässerschutz beschäftigen. Die Grundlage für wissenschaftliche Forschungsarbeit macht enorme Zahl der Laboratorien und Zentren aus, die an der Forstwissenschaftlichen Fakultät in vergangenem Zeitraum gegründet worden sind.

Herstellung, Pflege und Entwicklung der Zusammenarbeit mit anderen Universitäten im Inland und Ausland, sowie mit internationalen Institutionen und Organisationen, die sich mit wissenschaftlicher Forschungsarbeit und Hochschulfragen beschäftigen, war und ist eine dauerhafte Bestimmung der Forstwissenschaftlichen Fakultät geblieben. Darüber zeugen zahlreiche Übereinkommen über die Mitarbeit, die mit Partnern aus zahlreichen Ländern abgeschlossen wurden und aufgrund denen Studenten- und Lehreraustausch vervollständigt wird, sowie erworbenes Wissen und Erfahrung und gemeinsame Teilnahme an Projekten.

Die Fakultät besitzt Bibliothekraum, der in drei Segmenten organisiert wurde: Arbeitsraum für Beschäftigte in der Bibliothek mit Leseraum für Professoren, Studentenleseraum mit 50 Plätzen und Abstellraum über 200qm, in dem bemerkenswerter Teil des Bibliothekfonds aufbewahrt wird. Die Fakultät hat eine reiche Publikationstätigkeit mit langer Tradition, auf die sie stolz ist.

Die Fakultät verwaltet drei wichtige räumliche Ganzheiten: Unterrichtsbase „Goč“ (3731 ha), Unterrichtsbase „Majdanpečka domena“ (2078 ha) und Arboretum auf dem Hofland der Fakultät (6,7 ha).

Hauptanwendung der Unterrichtsbasen besteht in der Durchführung des Feld- und Praktikumunterrichts und wissenschaftlicher Forschungsaktivitäten der Studenten und Beschäftigter. Die Fakultät führt auch drei naturgeschützte Gebiete, als beauftragter Kurator: Speziellen Naturresevat „Goč-Gvozdac“, Strengen Naturresevat „Felješana“ (15.28 ha) und Naturdenkmal „Arboretum der Forstwissenschaftlichen Fakultät“.

Studentenorganisationen an der Forstwissenschaftlichen Fakultät existieren so lange wie die Fakultät auch. Studentenverband der belgrader Forstwissenschaftlichen Fakultät wurde am 04.12.1923 gegründet, der bis dato durch den Studentenverband der Landwirtschaftlichen Fakultät tätig war. Dominante organisatorische Aktivitätenform der Studenten an der Forstwissenschaftlichen Fakultät der Universität im Belgrad stellt Studentenpalament dar, der zahlreiche Sektionen hat. Durch gewählte Vertreter, Studenten sind ebenso vertreten im Fakultätsrat und Unterrichts-wissenschaftlichem Rat der Fakultät.



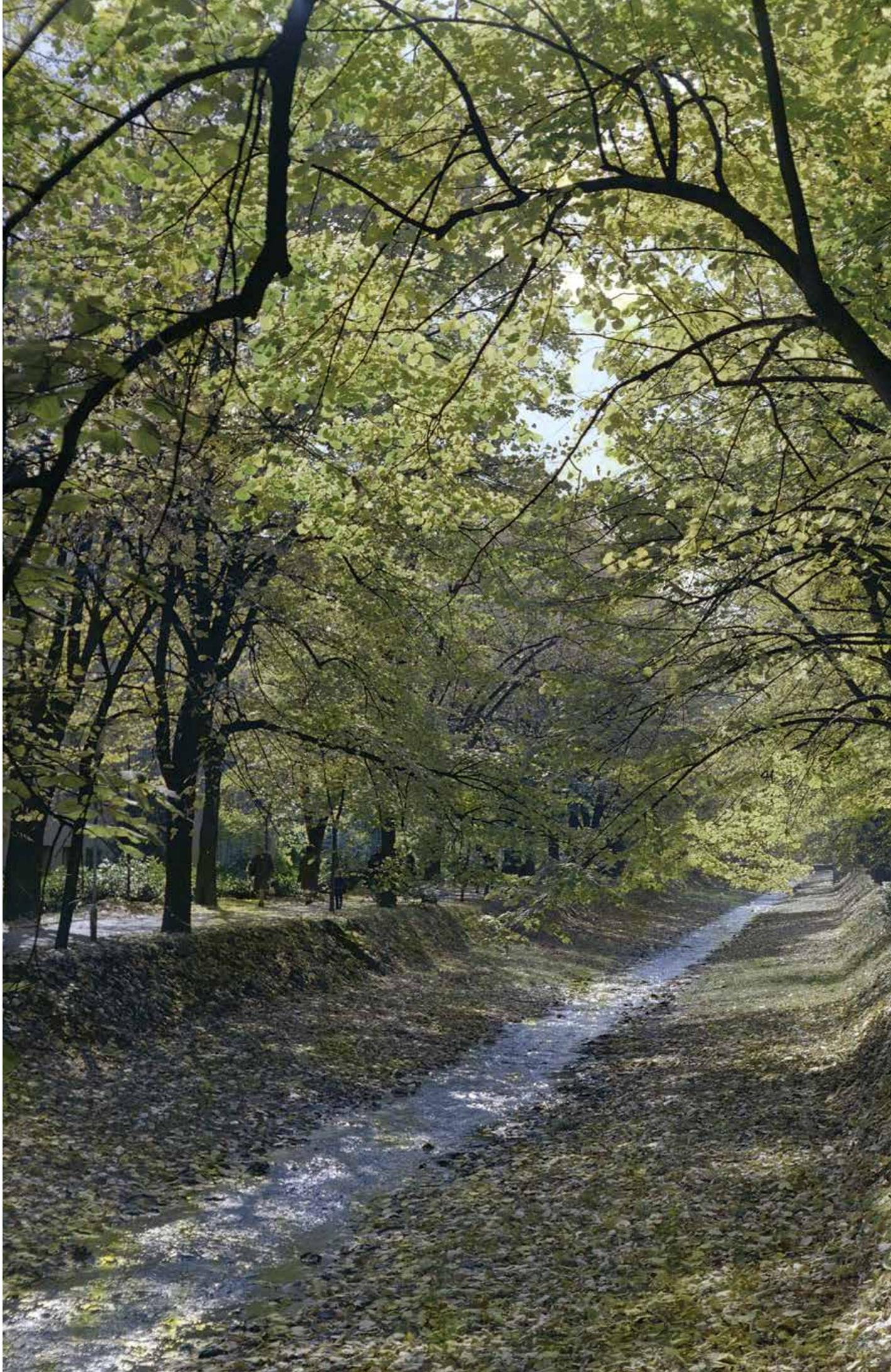




Photographs of landscapes and forests from the collection of the engineer Stevan Kolarović (1889, Sremska Mitrovica – 1987, Belgrade) kept by the Faculty of Forestry:

- Srem (p. 6, 320, 330),
- Đerdap (p. 9),
- Kopaonik (p. 91, 198, 224),
- Fruška Gora (p. 103),
- Vrnjci (p. 215, 332),
- Gornje Podunavlje (p. 79, 117, 319),
- Goč (p. 165),
- Golija (p. 364),
- Prokletije (p. 181),
- Jastrebac (p. 301),
- Vratna (p. 321, 325),
- Deliblatska peščara (p. 331)





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