

UNIVERSITY OF NOVI SAD
FACULTY OF SCIENCES



be an artist-scientist

City of Novi Sad

Novi Sad is the capital of the Autonomous Province of Vojvodina and the second largest city in Serbia. It is the industrial, cultural, scientific, educational, and administrative centre of Vojvodina.

Novi Sad is located in a vast plain, easily reachable from all directions. It is a city of friendly and hospitable people, clean and easy to move around place, with many green oases and parks, full of nature lovers. The



Fortress of Petrovaradin, a historical site, is situated on the right bank of the River Danube, which is the city's heart, its power and pride, and also one of the favorite places of both the inhabitants and visitors of Novi Sad.

The famous public beach called Štrand is the city's ever attractive hot spot. Walking, jogging, roller-skating along the Danube quay are popular ways of recreation.

Novi Sad has always been the cultural and artistic hub of this part of Serbia. It is the home of the Matica srpska - the oldest cultural-scientific institution of Serbia, the Serbian National Theatre, the Sterijino pozorje Theatre Festival and many other important institutions and cultural events.

Novi Sad is constantly changing, opening to the rest of the world, and becoming





more and more multicultural and versatile. Nowadays, a widely recognized symbol of the city is the Exit Festival. Thousands of young people from all over the world come to Novi Sad to enjoy great performances and concerts given by the world's top performers.

Novi Sad is proudly bearing the attribute of being multinational, multicultural and multi-confessional place embracing the motto of unity in diversity.

For more information about the city visit www.novisad.rs







University of Novi Sad

The University is educational, scientific and art institution, founded in 1960, and it is the only state university in AP Vojvodina. It comprises 14 faculties and two research and developmental institutes and plays an important role on the Novi Sad and Vojvodina social life.

It is a comprehensive, internationally oriented educational and research centre. The higher education based on scientific research is a permanent University orientation, together with its openness to new ideas and different modes of cooperation on the national and international level.

The University also reflects the multi-ethnic society of Vojvodina considering the



intensifying international cooperation and participating in the process of university reforms in Europe, the University of Novi Sad has come to be recognized as a reform-oriented university, both in region and on the map of universities in Europe.



49,000 students, **3,300** professors and assistants, **1,200** members of non-teaching staff, **260,000** m²



fact that four faculties provide lectures in national minority languages.

The University of Novi Sad promotes all aspects of academic and scientific cooperation with neighboring universities through numerous bilateral and multilateral agreements, conferences, exchanges, summer schools, joint projects, etc. Having invested considerable efforts toward

University campus is a unique place gathering almost all of the faculties in one place. Located by the Danube river, near the town centre, this purposely built complex is a unique in comparison with other state universities in the country. Besides faculties, there are two students dormitories, student restaurants, Student Health Centre and sport playgrounds.

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Faculty of Sciences

HISTORY

Faculty of Sciences was founded in 1969 by the Assembly of the Autonomous Province of Vojvodina. Before that, science and mathematics had been taught at several faculties, and the academic year 1961/62 was the year of founding the University departments, previously known as institutes, for Physics, Mathematics, Chemistry, Biology and the Chair of Geography at the Faculty of Philosophy.

Construction of the 'Blue Building', the modern home of the Faculty of Sciences, was completed during 1989. The Law on University from 2003 brought the change of institutes into departments and set up the Faculty's new internal structure of five departments.

EMPLOYEES

According to the latest data, the overall number of people employed at the Faculty of Sciences is 565: 383 members of the teaching staff (126 full professors, 39 associate professors, 77 assistant professors) and the rest being administrative staff.

INTERNATIONAL COOPERATION

Intensification of international cooperation and activities in the domain of internationalization are part of the Faculty's mission and strategy for the fastest integration into the European Higher Education and Research Area. Activities of international cooperation grew to now include great collaborative projects involving multilateral stakeholders, exchanges and mobility of academic staff and students, study and research visits, as well as all activities contributing to advancement of both teaching and

research work. Cooperation and contacts are established in the region, Europe, and worldwide, and the Faculty constantly works on enhancing its participation in international research and education projects. Some of the research groups managed to become in-



ternationally visible on the map of the European Research Area, which raises the overall visibility of the Faculty of Sciences.

SCIENTIFIC RESEARCH PROJECTS

Primary goal of scientific and research work is to contribute to fundamental investigations, apply our own results and combine them other relevant in the country and abroad, with the overall benefit for the

Departments

- Department of Biology and Ecology
- Department of Physics
- Department of Geography, Tourism and Hotel Management
- Department of Chemistry, Biochemistry and Environmental Protection
- Department of Mathematics and Informatics

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society and economy. National and international projects are carried out within all departments. International cooperation has been established with many universities and institutions through various projects and within a number of programmes.

Currently, there are twenty seven international projects in the process of realization (FP7, Hungary-Serbia IPA Cross border Co-operation Programme, South East Europe Programme, CEEPUS, SEE-ERA.NET, COST action, SCOPES, bilateral cooperation and multilateral cooperation) and 71 pro-

sional scientific and educational capacities of the Faculty, and integration into the research area of Europe and the world.

STUDENT MOBILITY AND EXCHANGE

The Faculty has built strong strategic partnerships with many universities and institutions in Europe and worldwide. These links are aimed at supporting the policies which promote mobility on all levels and exchange of information and research expertise. When it comes to student exchange programmes, it is worth mentioning that the

eral generations of successful alumni. Very fruitful collaboration exists with the Faculty of Sciences Prince of Songkla University - Hat Yai, Thailand, and the Technical University of Graz in Austria - through the Summer School of Chemistry. Mobility and exchange programmes are implemented through bilateral agreements the Faculty has with other institutions from the region, EU and the rest of the world (exchange with the Faculty of Ecology in Moscow, Russia, International Sakharov Environmental University (ISEU) from Minsk, Belarus, partner universities

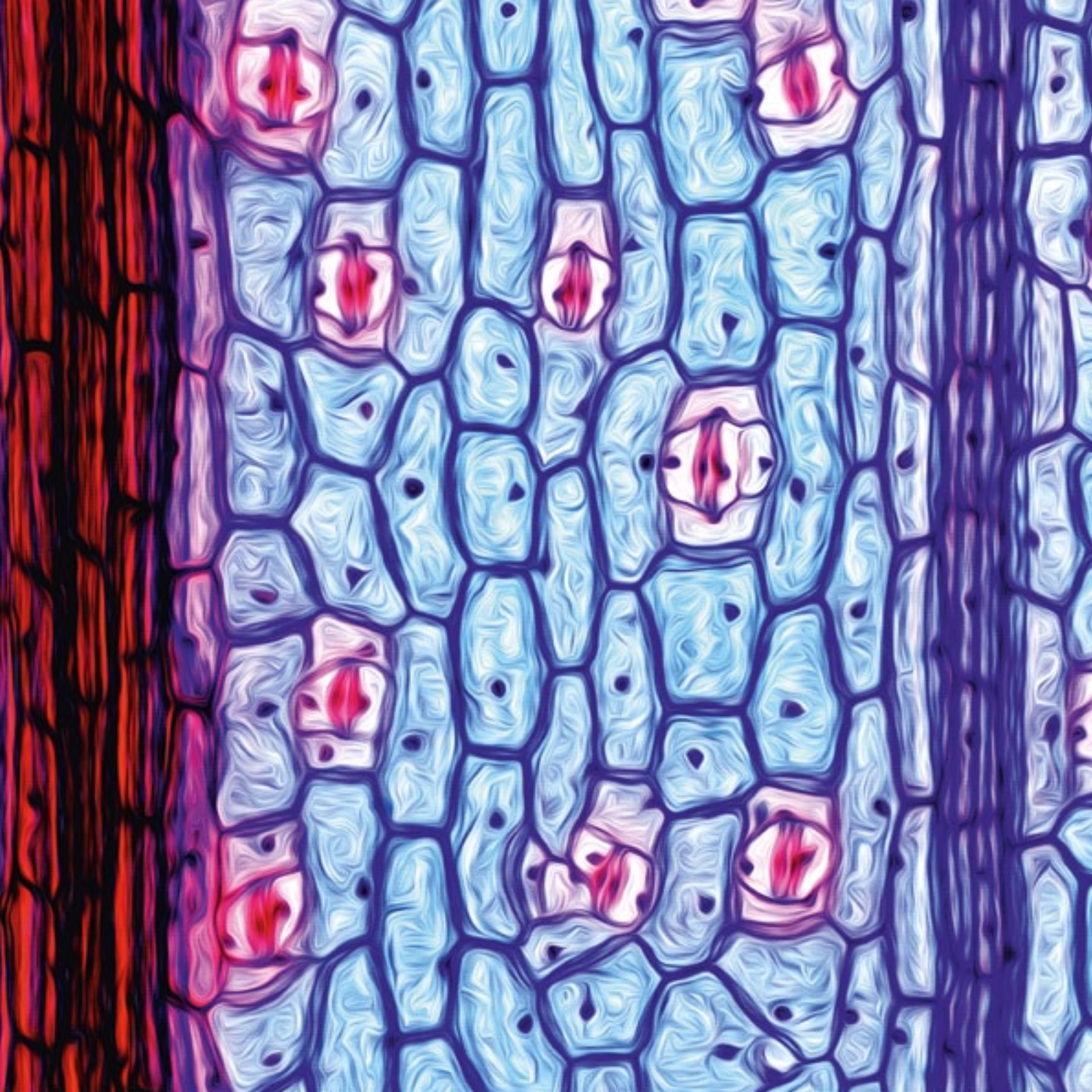


jects of the Ministry of Education, Science and Technological Development of the Republic of Serbia in the group of fundamental research, technological development and integral and interdisciplinary research, 27 of them being led by researchers from the Faculty of Sciences. The Provincial Secretariat for Science and Technological Development is financing work on another 27 projects.

There are continual activities on the preparation of proposals for projects in the frame of international cooperation. These projects are aimed at strengthening the research infrastructure, expanding profes-

University of Novi Sad and Faculty of Sciences as its integral part are active and successful in Erasmus Mundus programme, especially within the Erasmus Mundus External Cooperation Window (projects like Basileus, JoinEUSee, EM2-STEM, SIGMA, ERAWEB, EUROWEB, etc). This helped to considerably improve the mobility flow and further efforts to raise the incoming mobility. Some programmes have been successfully running for many years, growing from mobility networks to research project partnerships. The Campus Europae Exchange and Mobility Programme is among the oldest, verified by sev-

from Croatia, Slovenia, Former Yugoslav Republic of Macedonia, etc.). Faculty of Sciences is part of the CEEPUS network (Central European Exchange Program for University Studies), which enhances the exchange with the universities from central and southern Europe. Global UGRAD exchange programme with the USA is very successful and popular among students. We wish to make our students aware of the importance of mobility and exchange. Therefore, the Faculty's International Relations Office organizes various promotional events and provides support and advisory services to all interested candidates.



Biology and Ecology

Bachelor academic studies provide broad fundamental knowledge in the field of *Biology, Ecology* and *Biology Teaching*.

Master academic studies are more specialized and lead to one of the following degrees: *Master of Science in Biology*, organized into four distinct modules: Botany, Zoology, Microbiology and Molecular Biology; *Master of Science in Ecology*, organized into three modules: Ecological Engineering, Hydrobiology, Conservation and Sustainable Development; *Master of Science in Biology Teaching*.

PhD studies lead to one of the following degrees: *PhD in Biology*, *PhD in Ecology* and *PhD in Biology Teaching*

Teaching activities are performed in well-equipped lecture halls and modern laboratories. Various collections of botanical and zoological specimens as well as other types of biological material are used in teaching process. In addition to this, three field excursions are integral part of both biology and ecology course curriculum in the first, second and third year of bachelor studies. Field



excursions last from 10 to 15 days during which students are obliged to collect biological specimens, create their own collections as well as to pass field excursion specimen recognition tests.

Teachers and associates at the Department of Biology and Ecology are actively participating in local, national and international projects focusing on both pure and applied research within the entire scope of biological sciences.

As a part of cooperation between the University of Novi Sad and Prince of Songhla University in Hat Yai, Thailand, our department has established cooperation



with the Department of Biology of Prince of Songhla University. This cooperation has so far included the student and teaching staff exchange programmes. However, the scope of the cooperation is expected to broaden, by introducing guest lecturing activities and establishing mutual research projects. There has been similar cooperation with the International Sakharov Environmental University in Minsk, Belarus.

Apart from cooperation with other universities, our undergraduate and post-graduate students have broad possibilities to apply for a number of mobility pro-

Chairs

- Botany
- Microbiology
- Zoology
- Physiology, Genetics and Histology
- Human Biology and Biology Teaching Methodology
- Ecology and Environmental Protection

grammes that offer scholarships for studying in EU countries.

Since 1983, students of our Department have been organized by the Association of Biology and Ecology Students "Josif Pančić" which offers them opportunity to become more familiar with the methodology of scientific research, to implement their ideas into research, present results as well as to take part in writing of scientific paper.

EMPLOYMENT POSSIBILITIES

With a broad scope of study areas, the Department of Biology and Ecology prepares students for various careers – in science, industry and education. Our graduates teach in primary and secondary education, work in research institutes, medical centres or in the sector of agriculture, veterinary medicine, forestry or other institutions related to ecological and environmental issues.

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DEPARTMENT OF

Physics

Bachelor academic studies are the beginning of academic education and there are two groups at this level - Physics Teaching and Physics.

Upon completion of the first study group, students obtain the Bachelor of Science degree in Physics Teaching. The second group consists of four modules: Research in Physics, Medical Physics, Physics-Meteorology and Physics - Astronomy with Astrophysics. Upon the completion of these study groups, students obtain the Bachelor of Science degree in Physics.

Master academic studies provide further academic education:

- Master studies in Physics Teaching (MSc in Physics Teaching)
- Master studies in Physics with elective modules: Research - Physics of Materials, Research - Nuclear Physics, Research - Plasma Physics, Research - Theoretical Condensed Matter Physics, Medical Physics, Physics - Meteorology and Physics - Astronomy with Astrophysics (MSc in Physics)

PhD studies provide further education in nuclear physics, physics of materials, plasma physics and theoretical condensed matter physics as well as teaching methods in science subjects, including physics.

International programme Campus Europae within European University Foundation situated in Luxembourg offers mobility to students into 18 European Universities and student exchange programmes, which are continually broad-

ened by introduction of new student mobility destinations.

Teaching and research staff of the Department participate in scientific and research projects at international, national and local level within which basic and applied research in theoretical and experimental physics are conducted.

EMPLOYMENT POSSIBILITIES

The Bachelor of Science in Physics degree prepares students for careers in a variety of fields, including scientific and development institutes or development sectors within companies, in quality control, air transport, medical industry, all companies where measurement and development of measurement methods are needed, astronomical observatories, planetariums, hospitals, schools, banks, meteorological observatories, institutes for environmental protection in government sector and in all sectors of modern industry.

VOCATIONAL STUDIES - OPTOMETRY

Department of Physics also hosts vocational studies in Optometry. The main aim of optometry is to correct visual deficiencies and detect eye conditions that might harm the visual system. Optometrists are trained to conduct eye exams in order to detect sight deficiencies, traumas, eye diseases or abnormalities and problems connected with vision. Moreover, qualified optometrists are trained to diagnose, consult, prescribe, prepare and provide contact lenses or glasses.

Studies are based on fundamental disciplines, optometry disciplines and practical training and the programme is in concordance with study programmes of European

Universities and European standards. The success of teaching is enhanced by an excellently equipped classroom with modern teaching aids, a laboratory and scientific equipment. Practical training is obligatory and considered an important part of education.

With the aim of enhancing the studies, there are renowned professors from Universities in Great Britain, Italy, Spain and Switzerland actively engaged in educational process. Moreover, there is cooperation and partnerships with world's leading com-



panies in this sector such as Essilor, CIBA Vision and Grand Seiko.

EMPLOYMENT POSSIBILITIES

There is a variety of job opportunities in this field, for instance in private practice, vision clinics and optics industry. Upon completion of studies students are qualified to run their own business in optics and as opticians. Moreover, they are trained in business skills, marketing, finances and economics, legislation and organisation, as well as to take precaution measures at work and environment protection in concordance with the regulations and laws of the Republic of Serbia.

Chairs

- Experimental Condensed Matter Physics
- Physical Electronics
- Nuclear Physics
- Theoretical Physics
- General Physics and Physics Teaching Methodology

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Geography, Tourism and Hotel Management



Department, which was established in 1962, demonstrates a high level of teaching, scientific and research work. For the past fifty years, the area of expertise at the Department has been in the field of Geography and for twenty years in the field of Tourism.

Department organizes the following study programmes:

- **Bachelor academic studies**
 - Geography
 - Management (Modules: Tourism, Hotel Management, Hunting Tourism, Gastronomy)
- **Master academic studies**
 - MSc in Teaching Geography
 - MSc in Geoinformatics
 - MSc in Biology and Geography
 - MSc in Geography and Informatics
 - MSc in Management (modules: tourism, hotel management, hunting tourism)
- **PhD studies**
 - PhD in Geosciences – Geography
 - PhD in Teaching Methodology for Sciences – Geography
 - PhD in Geosciences – Tourism

Apart from teaching process performed in the classroom, field work and practical internships constitute an integral part of the studies thus enabling students gain practical experiences for their future jobs. Field work and practical internships are organized both in the country and abroad.

The most significant and specific feature in education of professionals at Gastronomy and Hotel Management Modules is the practical training where theoretical knowledge is applied, certain operations, techniques and procedures from the subjects in the study programme are mastered. Practical training has been offered since 2001.

At the Department, there are several foreign professors who take part in giving lectures to students and are distinguished experts in the fields of economy and tourism.

The Department publishes two international scientific journals: *Geographica Panonica* and *Turizam*.

Additionally, student researchers receive great attention. Their participation in the scientific work is conducted through the Society of Young Researchers of Geography “Branislav Bukurov”, and the branch of European Geography Association for Students and Young Geographers “EGEA” in Novi Sad.

EMPLOYMENT POSSIBILITIES

Students who graduate at the Department of Geography, Tourism and Hotel Management have a wide range of job opportunities in primary and secondary schools, universities, research centers, hydro-meteorological and urban planning institutes, tourism organizations, travel agencies, hotels, hostels, restaurants, hunting grounds, hunting organizations, national parks, nature reserves.

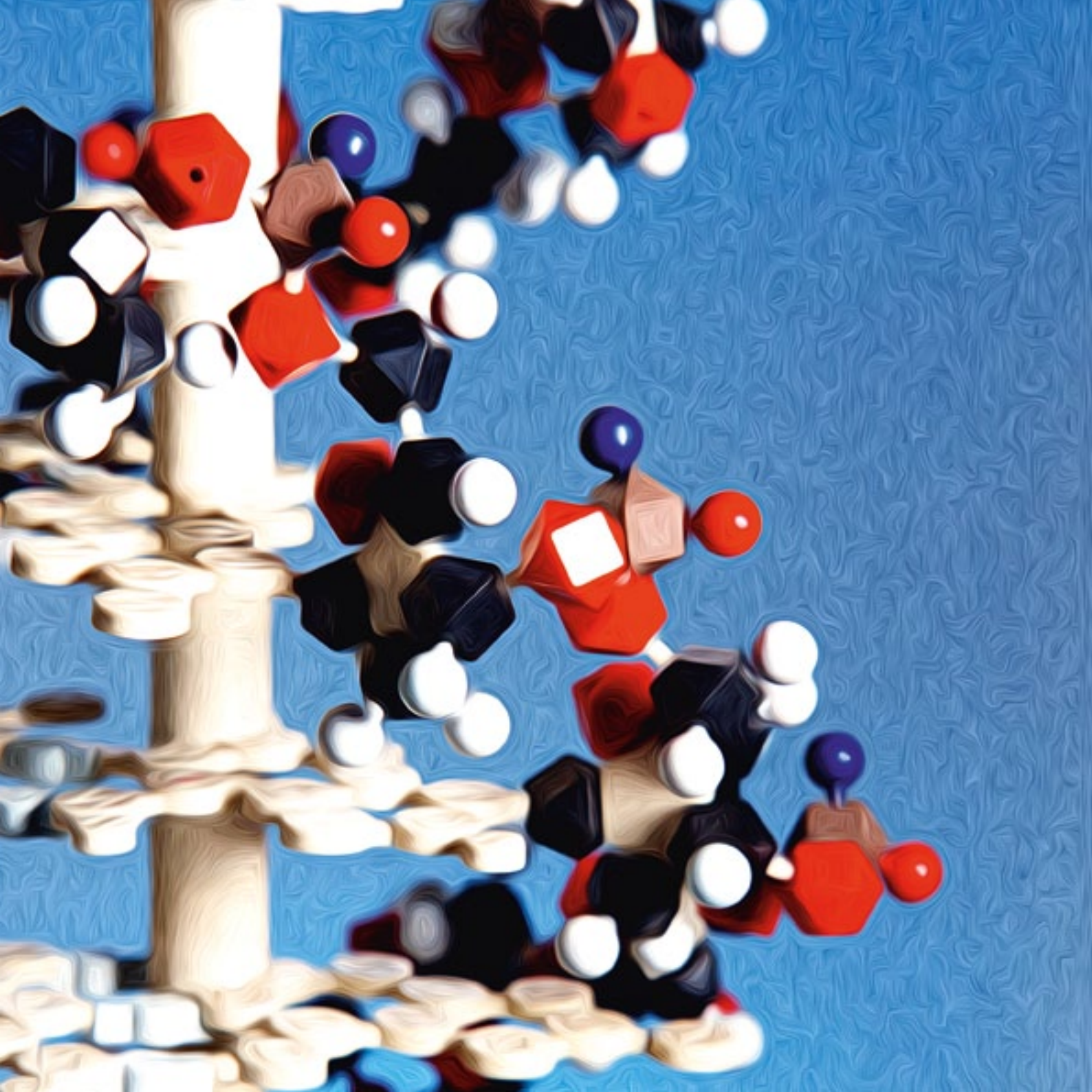
Chairs

- Physical Geography
- Social Geography and Methodology of Teaching Geography
- Regional Geography
- Geoecology
- Tourism
- Hotel Management and Gastronomy
- Hunting Tourism



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Chemistry, Biochemistry and Environmental Protection



The activity of the Department, which was founded in 1962, is of a manifold character: education, scientific research and transfer of research results into practice, issuing of textbooks, handbooks and other professional and scientific publications. The educational activity of the Department encompasses academic studies at all the levels of higher education in the frame of the bachelor, master, specialist and doctoral studies.

Bachelor studies – The programme provides fundamentals in the field of chemistry necessary for competent work in chemical laboratories and other professions that require application of chemical knowledge and information. Bachelor's degree in Chemistry – Quality Control and Environmental Management - The programme prepares students for a career that requires the knowledge of chemistry and focuses on environmental protection and quality management. Bachelor's degree in Biochemistry – the programme creates professionals with multidisciplinary expertise in the area of chemistry, biology and medicine. Bachelor's degree in Environmental Protection – Environmental Analyst

Synthesizing fundamentals of natural sciences (chemistry, biology, physics), the programme offers broad knowledge and comprehensive approach to analyzing environmental problems and finding solutions.

Master studies – the programme includes two modules:

- Chemistry and
- Chemistry Teaching.

Depending on chosen electives, the Chemistry module degree supplement specifies one of the following fields of study: Analytical Chemistry, Inorganic Chemistry, Organic Chemistry and Quality Control and Environmental Management. Master's degree in Biochemistry, Master's degree in Environmental protection – Environmental Analyst.

Specialization studies

- Chemistry
- Chemistry Teaching
- Biochemistry
- Environmental Protection

PhD Studies – Phd Degree in Chemistry, Phd Degree in Biochemistry, Phd Degree in Environmental Protection, Phd Degree in Chemistry Teaching.

The scientific research activities are realized through fundamental and applied research in chemistry, biochemistry, environmental protection and related disciplines, as well as through the transfer of research results into practice in the cooperation with the industry.

The laboratories are provided with standard laboratory equipment needed for educational and research activities as well

Chairs

- Analytical Chemistry
- Biochemistry and Chemistry of Natural Products
- Physical Chemistry
- Chemistry Education and Teaching Methodology
- Chemical Technology and Environmental Protection
- General and Inorganic Chemistry
- Organic Chemistry

as for routine measurements. Besides, the Department has at its disposal a number of specific and capital equipment.

Possibilities – The experts in these fields are needed in chemical laboratories of various industrial branches, as well as in development, control and research laboratories.

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DEPARTMENT OF

Mathematics and Informatics

Department of Mathematics and Informatics, established in 1954, represents one of the leading teaching and scientific research institutions in the fields of mathematics and informatics in Serbia. It has grown into a modern, European department, acknowledged for teaching and scientific achievements of its professors, graduate students, doctoral and post-doctoral students.

Education process is performed through study programmes at bachelor, master and doctoral academic studies. In addition to regular coursework, students of senior years of study can become involved in scientific research work which is realised through student societies and through a number of domestic and international projects. As part of their curricular and extra-curricular activities, students can obtain internships in important business enterprises in the country and abroad.

The employees of the Department are involved in the realisation of a great number of scientific and education projects, mainly international ones. These are mainly projects funded by current programmes of the European Union, as well as by other funds, IPA programmes of cross-border cooperation Hungary-Serbia, and bilateral and multilateral cooperations with several European countries (Germany, France, Slovenia, etc.).

Numerous activities of the Department are related to the organisation of guest lectures of outstanding international experts, the organisation of scientific conferences, study trips of our researchers to for-

and Informatics

eign universities, and to the development of the centres of excellence. The Department participates in the current mobility programmes, such as BASILEUS, JOIN EU SEE, STEM, CEEPUS, DAAD, etc. Furthermore, student and teaching staff exchange is successfully realised through a cooperation agreement with the University of the Prince of Songkla from Thailand. The Department also publishes a scientific journal - Novi Sad Journal of Mathematics.

STUDIES OF MATHEMATICS

Depending on their interests, prospective students can choose one of the three general study directions:

- **Theoretical Mathematics** – Students gain basic knowledge of fundamental fields of mathematics needed for further work in research institutions or in academia.
- **Financial Mathematics** – Students are mainly focusing on applied mathematics in the financial sector. As part of their studies, students can obtain internships in the stock exchange, banks and companies which hire experts in their fields of study.
- **Technical Mathematics** – Students are gaining specific knowledge applicable in engineering. After completing the studies they are able to get jobs in industry, research and development centres, and all other places where their ability to join multidisciplinary work is valued.

STUDIES OF INFORMATICS

During their studies students of Informatics learn about various contemporary

programming languages, different techniques and tools, efficient solving of practical problems, while they complement their knowledge with relevant mathematical topics which can be applied in informatics.

Thanks to several elective modules (starting from the undergraduate studies with two modules: *Computer Science* and *Information Technologies*) and a lot of elective courses, students can start specializing in a certain area of Informatics very early, or at least concentrate more on fundamental basics of Informatics, methods in Informatics or broader business applications.

Since the Faculty of Sciences practices strong collaboration with several software companies, students have a lot of options for performing internships or receiving scholarships from partner companies during their course of studies, especially at graduate level.

EMPLOYMENT POSSIBILITIES

After completing their studies, students can explore a pool of available employment opportunities. It is extremely rare that students with a degree of mathematics or informatics wait for employment (they often start working even during their studies). Depending on the major, employment can easily be found in schools, at the faculties, in scientific and research institutions, on the stock market, in banks, insurance companies, government administration, agencies for public opinion research, industry, software companies, etc.

Chairs

- Analysis, Probability Theory and Differential Equations
- Functional Analysis, Geometry and Topology
- Information Systems
- Mathematical Logic and Discrete Mathematics
- Numerical Mathematics
- General Algebra and Theoretical Computer Science
- Applied Algebra
- Applied Analysis
- Computer Science
- Theoretical Foundations of Informatics



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