

MILSET EXPO-SCIENCES EUROPE 2022

SUCEAVA - ROMANIA

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ESE SUCEAVA 2022

Together in science and fun

24-30 JULY 2022

STEFAN CEL MARE UNIVERSITY OF SUCEAVA

ORGANISERS:



Universitatea
Ștefan cel Mare
Suceava



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Dear Guest, dear Participant,

Welcome to the MILSET Expo-Sciences Europe 2022!

For one week, Suceava, Romania, will be the ground of a fabulous science adventure gathering youngsters from all over Europe and beyond!

Being here today is the outcome of a great committed and resilient team which worked hard to maintain the event kindly hosted within the modern facilities of the University Ștefan Cel Mare of Suceava. The event, first foreseen in 2020 but directly hit by the pandemic then faced a complex geopolitical situation, is organised by Cygnus, MILSET Romania and MILSET Europe.

It is with the idea - that together we could do so much more - that MILSET, the International Movement for Leisure Activities in Science and Technology, was born connecting organisations around the world to inspire youth through science and technology initiatives.

To reach it, a large programme has been set giving space to the projects' presentation carried by the participants whom have been selected among the brightest young scientists of their countries but as well to debates, workshops, social and cultural activities all aiming at providing new experiences and opportunities.

I wish you to live an enriching experience of encounters, discoveries, and friendship.

Antoine van Ruymbeke
MILSET Europe President





It is with great pleasure that I welcome all participants in the 2022 edition of the MILSET Expo-Sciences Europe (ESE) to Stefan cel Mare University of Suceava (USV), one of the most dynamic higher education institutions in Eastern Europe. Located in Bukovina, a region in north-eastern Romania, USV is an innovative and complex public higher education institution, which offers undergraduate, master's, doctoral and post-doctoral programs and conducts scientific research in the fields of economics, technical sciences, engineering and computer science, natural sciences, humanities and health. Since its establishment in 1963, our university has been a strong presence in a city of over 100,000 inhabitants, with a decisive contribution in building a modern identity for the local community, in the geopolitical context of regional development and cross-border relations between Romania, Ukraine and the Republic of Moldova. After more than half a century of service to higher education in the city of Suceava, USV responds to the challenges of new bold projects with enthusiasm and responsibility,

assuming its protective and rewarding role for countless academic performances, human models and moral landmarks that have undoubtedly contributed to the evolution and emancipation of national spirituality.

In this light, our university feels fortunate to host The MILSET Expo-Sciences Europe, which will undoubtedly be a festival of young people's creativity and a celebration of talent, diversity, originality, and innovation. We hope that, for one week, USV will become an interesting space for knowledge exchange and scientific networking, offering all attendees a proper context for manifesting their creativity, sharing their ideas, establishing new contacts and developing future collaborations. Some of the students who will be present in Suceava could become the leading initiators and experts of innovations to come. They could become change drivers, they could define and redefine progress.

I wish all participants constructive discussions, a vivid exchange of ideas and a week full of creativity and inspiration!

Valentin POPA

Rector Stefan cel Mare University of Suceava



The Cygnus Scientific Society is very pleased to welcome you to the city of Suceava. The non-governmental organization is dedicated to the popularization of science, especially among youth, through activities such as annual summer schools, symposia, astronomy camps and invention fairs.

CYGNUS Scientific Society is a non-governmental organization whose main purpose is to promote the Romanian scientific values.

The Scientific Society Cygnus has as its main objectives the popularization of science among young people, the support of scientific research, the promotion of the Romanian artists' works of art in Romania as well as abroad, and the promotion of UNESCO values.

In May 2001, Cygnus established its own publishing house and in October 2001, the Society was accepted as a UNESCO centre by the Romanian Federation of UNESCO Associations, Clubs and Centres.

It is a great honor and pleasure for Cygnus to help organize an event of the magnitude of the MILSET Expo-Sciences Europe. Cygnus also wishes to congratulate the youth who are participating in this event for proving their burgeoning scientific mastery.

With the hope that you will have many unforgettable moments in this beautiful region of Romania, called Bukovina, Cygnus would like to wish good luck to all participants.

Victor Şutac
President of the Cygnus Scientific Society

MILSET Europe



MILSET Europe is a European non-governmental, non-profit and politically independent youth organisation, created from member organisations of MILSET (International Movement for Leisure Activities in Science & Technology) holding their seat in Europe. These organisations work in the field of education, focusing on the organisation of science-and-technology activities for young people.

MILSET was founded in 1987 in Quebec, during the first Expo-Sciences International. Due to its constant growth, various regional branches have been formed to-date, namely,

- MILSET Europe
- MILSET Amlat (Latin America)
- MILSET Noram (North America)
- MILSET Africa
- MILSET Asia

Joining MILSET is adhering to its charter; a movement which participates in the local development of scientific and technical education in leisure time, promotes international cooperation, citizenship and peace, by practicing sciences and technology in a spirit of respect, understanding and solidarity within different geographic and spiritual communities.

Thanks to MILSET, tens of thousands of young people have already met to exchange and make the most of their creations, discuss with researchers, youth leaders and industrialists. These young people have developed projects together, discovered foreign languages and cultures, and have been trained to acquire new technologies.

Objectives

- to support European and international cooperation between regional and national associations, particularly in the form of exchanges of young people between MILSET Europe member and partner organisations;
- to encourage cooperation amongst young scientists on a European level, promoting the idea of a United Europe;
- to aid member organisations through the development and organisation of international seminars, training and conferences and by representing them on supranational and international bodies such as the European Commission;
- to stimulate the development and organise scientific and technical educational activities for young people and children such as Science Fairs, international meetings, youth congresses, summer camps, conferences, study trips, training courses and all activities helping to promote exchanges among youth of all countries, including young scientists;
- to motivate young people to get interested in science, and to help educators working in this field worldwide;
- to cooperate at global level within MILSET with organisations sharing the same objectives.

MILSET Romania



Mission and objectives:

- **MILSET Romania** will act as a non-governmental organization, non-profit and apolitical. As an independent organization it aims to develop scientific culture among young people by organizing programs for science and technology, science fairs, science camps, conferences, contests, forums, seminars, courses or other similar activities for scientific, educational, cultural.
- Romania will be a member MILSET and MILSET Europe will respect the regulations and resolutions in force, supporting young people to pursue excellence in terms of intellectual property.
- Members MILSET Romania shall inform each other about the work and the opportunities that are emerging useful for the progress of cooperation, whenever the situation demands.
- Annual organization of national competitions for the selection of participants in the activities of MILSET Europe and MILSET International.

Specific actions MILSET Romania:

- Partners will engage in activities to support young people with an interest in science, technology, engineering, mathematics, by motivation, cooperation through networking and by organizing specific activities, highlighting the importance of science and technology in a society, emphasis on the social development, business culture and human wellbeing
- Partners will collaborate with similar institutions in the country and abroad to organize specific activities and will involve teachers and researchers in order to achieve the MILSET objectives;
- Youth networks will be stimulated and supported and national and the international cooperation, will generate global opportunities for youth by engaging them in creative activities, scientific and technical;
- The partners are involved in the current revolution of science and technology in information and communication and will advocate for the free exchange of knowledge and building networks for sharing knowledge in a knowledge society;
- Focus will be on developing and strengthening cooperation relations between academia, research institutions and the undergraduate level;
- It will focus on the development of professional performances by organizing orientation activities for young people to transform society through creative initiatives in science and technology;
- Considering that the future society is being educated right now, members will collaborate to improve teaching activities, transfer of good educational practices, supporting practical activities of pupils and students;
- Develop partnership proposals for educational projects, scientific research, innovation, competitions of national and international programs, respecting ethics of science and engineering.

CYGNUS Scientific Society



Established in 1999 as an NGO, the CYGNUS Scientific Society (Societatea Stiintifica CYGNUS has taken charge of promoting the scientific values of the young generation. In May 2001, CYGNUS received the right of publication under the Copyright Act, and in October 2001, the Society was accepted as a UNESCO centre by the Romanian Federation of UNESCO Associations, Clubs and Centres.

At the present time, the center's activities occur under the patronage of UNESCO.

CYGNUS is one of important scientific organizations for young people in Romania. Through its activities, CYGNUS constitutes itself as a bridge which connects an academic approach with a pragmatic one; with the purpose of using and building on new theories, models, concepts and notions supplied by studies as well as research taking place in the domain of education students in scientific spirit, for science and using the science.

Mission: The goal of CYGNUS (research, feasibility studies, design, consulting) is to use and build on the intellect and expertise of youth in the scientific field which target the development of human performance and the improvement in quality of life. In addition, CYGNUS focuses on passing the higher level of scientific thought, through the implementation of a Knowledge Based Society.

Objectives:

- popularization of science among the population, especially on young people;
- high-level scientific research and nonformal education;
- promoting numerous scientific, cultural, historical and geographical entities of Europe and World.

Short History:

- 5th May 1999 – the first General Assembly of the Cygnus Scientific Foundation; the statute of the organization was voted and the first Board of Directors was elected;
- 16th August 1999 – Mr. Florin Munteanu was appointed honorary chairman of the Foundation;
- 30th November 1999 – Cygnus obtained the approval from the National Agency for Science, Technology and Innovation;
- 18th January 2000 – the legal proceedings were carried out at Suceava County Court for the setting up of the foundation;
- 31st January 2000 – Cygnus was registered in the special register for corporate bodies;
- 10th May 2001 – the organization obtained publishing rights;
- 2nd October 2001 – Cygnus obtained the approval of becoming a UNESCO Center from the Romanian Federation of the UNESCO Associations, Clubs and Centers;
- 7th February 2002 – the foundation changed its name into “Cygnus Scientific Society – UNESCO Center

Main Projects:

- METAMORPHOSES – Transdisciplinarity Summer School, Gura Humorului, Romania (15 editions)
- FRACTAL – COMPLEXITY National Summer School for Complexity Science, Romania (5 editions)
- ATLANTYKRON International Summer Academy, Capidava, scientific programs (12 editions)
- EUREKA! – CYGNUS National Physics Colloquium for physics teachers, Romania (11 editions)
- WEEKEND SCHOOL - Programmes of cultural-scientific education
- NEXUS-T - Programme of non-formal interdisciplinary sciences education (7 years)
- RoSEF – Romanian Science and Engineering Fair for Students, Suceava, national contest (12 editions)
- National Camp for Astronomy, Astrophysics and Physics for students, Voronet (9 editions)
- School on wheels, UNESCO program to attract young people from remote areas to science (12 years)

University “Ștefan cel Mare” of Suceava



“Ștefan cel Mare” University of Suceava (USV) is one of the fastest rising universities in the Eastern European region providing higher education of high quality standards at a relatively low cost. It is one of the very few universities in this region with a comprehensive curriculum including more than 100 programs at undergraduate, master, doctoral and post-doctoral level from all five faculty areas (Arts & Humanities, Engineering & IT, Life Sciences, Natural Sciences and Social Sciences). A unique educational outpost that goes back nearly half a century, USV’s transnational platform is aimed at discovering, preserving and disseminating knowledge while promoting basic European principles, such as unity through diversity, in an area where the credibility and identity of the European Union needs to be strengthened and further increased. Located in the beautiful and multicultural land of Bukovina, USV is surrounded by the greatest density of UNESCO monuments from this part of Europe, precious art monuments, great spiritual life and rich folklore traditions offering its students great opportunities for extra-curriculum activities.

What also stands out is USV’s ability to sustain regional development at national level within the North-Eastern area, as well as at transnational level through Ukraine and Republic of Moldova close partnerships.

USV is a Romanian institution of higher education situated at the confluence of important European cultures and civilizations. Its mission is to preserve and foster cultural diversity, to strengthen the relations with the Romanians across the border by encouraging new bilateral agreements and partnerships with universities from the European Union, as well as with non-EU institutions of higher education from Eastern Europe.

The Ștefan cel Mare University of Suceava (USV), through its three fundamental functions (research, teaching/learning and community services carried out under institutional autonomy and academic freedom), actively and explicitly contributes to the innovation and social development processes.

In this context, USV assumes the mission of education and scientific research having as main objectives:

- training of highly qualified specialists in the fields of study provided for by official national and European documents;
- harmonious modelling of students’ personalities, emphasizing their creativity and promoting their full development;
- continuous development of scientific research, at the level of contemporary international standards, aimed at affirming the scientific performances of members of the academic community, through their participation in the activities of the international community and in inter-university cooperation.
- continuous improvement of teaching and scientific research activities to achieve successful structural, qualitative and economic integration into the European higher education system and become a prestigious university on a national and international scale.

University “Ștefan cel Mare” of Suceava



To fulfil its mission and achieve its fundamental objectives, the USV aims to carry out the following priority activities:

- coordinating the teaching and acquisition of professional-scientific knowledge, in order to train specialists with advanced training for education, science, culture, art, social activities, economic activities, as well as the continuous improvement of graduates in the spirit of progress, knowledge and lifelong learning;
- organize competitive scientific research, by developing new research directions so as to specifically exercise the function of disseminating the results of scientific creation;
- ensure, expand and appropriately develop a material base to carry out all its activities;
- promote international cooperation relations and integration into the European

education system in terms of structural, qualitative and economic efficiency;

- establish specific relationships with the public authorities and with its external environment;
- responsible participation in the realization of scientific projects of great interest;
- redefine the balance between research and teaching aspects of positions held by members of the academic community;
- promote diversity and flexibility in the recruitment of staff.

The Ștefan cel Mare University of Suceava is :

- a space for learning, teaching and other processes with cognitive effects;
- an area of scientific, cultural, artistic and sports production;
- a space in which the foundations of the future status of the graduate are configured and redefined;
- a reference pillar of the integrative approach: the triangle university-public administration-community, formed by economic and social actors.

Petru Rareș National College of Suceava



Petru Rareș National College of Suceava is the biggest theoretical college from Suceava County. The college stands out because it offers a comprehensive curriculum, with a wide range of majors and specializations which meet the needs of the middle school students and of their parents. Thus, the college provides the students with Humanities majors, with specialization in Social Sciences, as well as Science majors, with specializations in Mathematics-Informatics and Nature Sciences. Most of these are taught in a bilingual system, in English, French and German.

All the graduates of the college pursue higher education, both at home and abroad. The majors they choose are varied, but most of them belong to fields such as engineering, IT, health or environment.

One of the main features is that teaching practice in the college is shaped by the availability of a wide variety of optional courses the teachers design in order to broaden the students' horizons, and most importantly, to facilitate the development of knowledge and cross-curricular competences. Since life does not consist of only separate realities of individual studying fields, it is essential for the students to have a holistic approach towards learning. As a result, the core of the teaching staff structures lessons

around the idea of human-nature relationship, with a view to promoting sustainable development. To support this approach, the college has built an educational park which includes: an outdoor classroom in the shape of an educational pavilion, an amphitheatre, a therapeutic alley, a weather station, an educational photovoltaic and wind system, solar clock, etc. All these can be visited in the educational park of the college.

Another characteristic of Petru Rareș National College is that it effectively combines formal, curricular education, with the non-formal, extracurricular one. The college is home to 10 societies and clubs, some of which have been functioning for more than 10 years, for example, the Invention and Innovation Club, NEXUS Scientific Club, VideoArt Club, the English Drama Club, the Debate Club, the Poetry Club or the Translation Club. Some more recent ones, such as the Robotics Club, Law Education Club or the Art Club, have also become popular with students. The wide variety of non-formal educational activities undertaken by the college is one of the reasons why middle school students choose Petru Rareș National College of Suceava.

The college carries out exchange projects with students from European countries, most of which are Erasmus projects. As such, students develop a

Petru Rareș National College of Suceava

cosmopolitan worldview, achieving a sense of inclusiveness. Moreover, their networking skills benefit from getting together with their peers from across Europe.

According to Romanian law, primary and secondary education institutions undergo regular certification procedures by governmental bodies. For example, on the last external evaluation round of quality assurance, Petru Rareș National College was granted top recognition in the field of extracurricular activities, being awarded EXCELLENT rating. The same rating was given for the School Research indicator (for both teachers and students). The EXCELLENT rating is rarely achieved in Romania, as it is based on certified innovation in the field it is awarded.

Petru Rareș National College is constantly developing and modernizing its material resources. For example, in 2021 the Documentation and Research Centre was inaugurated. With 11 multifunctional areas, it targets both students and teachers. Currently, a classroom and lab building is being constructed for the youngest students of the college.

Picture of the lab building and the glass pyramid illumination system of the Documentation and Research Centre.



Romania



Authentic, Natural and Cultural are the words that best capture the essence of Romania, a dynamic country rich in history, arts and scenic beauty.

Romania is a country located at the crossroads of Southeastern and Central Europe, on the Lower Danube, north of the Balkan Peninsula and the western shore of the Black Sea. Romania shares a border with Hungary and Serbia to the west, Ukraine and Moldova to the northeast and east, and Bulgaria to the south. At 238,391 square kilometres Romania is the ninth largest country of the European Union by area, and has the seventh largest population of the European Union with 20,121,641 people (October 2011). Its capital and largest city is Bucharest – the sixth largest city in the EU.

History

The earliest reliably dated European modern human fossils, up to now, were discovered in 2002 in southwestern Romania (at Pesteră cu Oase - translated as the "Cave With Bones"). The fossil's age is estimated at 37,800 to 42,000 years old. Three clay tablets, dated to around 5300 BC, discovered in the village of Tartaria (central Romania), have been the subject of considerable controversy among archaeologists, some of whom claim that the symbols represent the earliest known form of writing in the world.

The Dacians were an Indo-European people, part of or related to the Thracians. They were the ancient inhabitants of Dacia, located in the area in and around the Carpathian Mountains and west of the Black Sea.

The impressive architecture and astronomical calendar discovered in ancient Dacia was the Sarmizegetusa-Regia, which was the capital city of Dacia. Representations formed with specific signs were interpreted as a cosmological topography unique in the world. They decipher the ways of marking time intervals obtained by mathematical ratios, and geometric symbols of light and shadow effects of physical phenomena.





Sarmisegetuza Sanctuary

There were signs placed in special places of stone in order to guide one through the architectural ensemble. Some astronomical theories considered Oriental influences due to its location, as well as being a necessity of measuring time making use of the moon and the stars. Sanctuary with a religious, astronomical and calendar directed role, Sarmisegetuza was an example of Dacian construction system, being located in the middle of a sun positioned andesite. It consists of an arrangement of 16 rays to signify the constellation stars.

The name "Romania" comes from the Latin word "Romanus" which means "citizen of the Roman Empire." The empire expanded into what is now Romania in 106 AD, under the rule of Emperor Trajan (98 to 117 AD) when the Roman Empire reached its greatest territorial extent through his conquests in

the east. It took the Romans seven years and two long wars to conquer Dacia (today Romania). The Roman occupation lasted until the end of the third century.

After the end of the Roman rule, the Romanian territory faced a period of difficulty generated by the waves of migration, which affected the entire

Europe. Nevertheless, the feudal Romanian states-Transylvania, Moldavia and Wallachia, were gradually built, beginning with the 9th century. They played an active role in the international affairs, contributing to the defence of the European culture from the Ottoman threat. The Phanar Regime interrupted the natural evolution of the Romanian society. The 19th century represented both the end of the Ottoman dominance and Romania's synchronisation with the European development pace. Certain events, as well as the change of mentality, the economico-social evolution and politics led to the foundation of the modern national Romanian state in 1859.



Alexandru Ioan Cuza

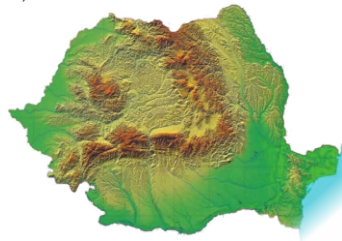
The United Principalities emerged when the territories of Moldavia and Wallachia were united under Prince Alexander Ioan Cuza in 1859. In 1866 Prince Karl of Hohenzollern-Sigmaringen was called to the throne as the Ruling Prince of the Romanian Principates and, in 1881, he was finally crowned as King Carol I, the first monarch of the Kingdom of Romania. Independence from the Ottoman Empire was declared on May 9, 1877 and was internationally recognised the following year. At the end of World War I, Transylvania, Bukovina and Bessarabia united with the Kingdom of Romania. Romania's post World War II history as a communist-block nation is more widely known. After December 1989, the Constitution established Romania as a republic with a multiparty system, a market economy and individual rights of free speech, religion and private ownership. Romania joined NATO on March 29, 2004, and the European Union on January 1st, 2007. It is a member of the Latin Union, Francophonie, OSCE, WTO, BSEC and the United Nations.

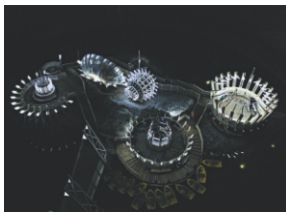
Geography

With an area of 92,043 square miles (238,391 square kilometer), Romania is the largest country in Southeastern Europe. It is roughly the same size as the United Kingdom.

Romania's relief is characterized by a great diversity and complexity. Mountains occupy 28% of the territory, hills and highlands cover 42% of the country, and the lowlands occupy 30%.

Romania is a Carpathian country because 2/3 of the Carpathian Mountains are found on its territory. The Carpathian Mountains are home to one of the largest undisturbed forests in Europe. 400 unique species of mammals, including the Carpathian chamois, call the Carpathian Mountains home. 60% of European brown bear population lives in the Carpathian Mountains.





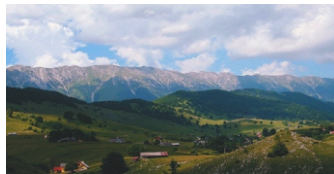
Inside the old Turda Salt Mines located in Transylvania stands the world's largest salt mine museum. The second largest underground glacier in Europe (in terms of volume) also can be found here. The 3500 year old Scarisoara glacier is located in the Bihor Mountains, 144 km SW of Cluj Napoca. It has a volume of 75,000 cubic meters.

Romania is a Danubian country due to the fact that the whole lower section of the Danube (1075 km) is situated on Romanian territory or represents parts of the bordering sections shared with Serbia, Bulgaria and Ukraine. The Danube has represented an important axis of navigation ever since Antiquity. Nowadays, the Danube, the Rhine, the Main-Rhine and the Danube-Black Sea canal create a link between the Black Sea and the Northern Sea. Not only is the Danube Delta the second largest delta in Europe, but also the best preserved one. As well as that, Romania opens to the Black Sea, with a length of the coast line of 245 km.

Regions

Transylvania is a historical region in the central part of Romania. The meaning of the word "Transylvania" is the land beyond the forest. Bordered on the east and south by the Carpathian mountain range, historical Transylvania extended in the west to the Apuseni Mountains. The region of Transylvania is known for the scenic beauty of its Carpathian landscape and its rich history. In the English-speaking world it has been strongly associated with vampires, chiefly due to the influence of Bram Stoker's novel Dracula as well as its later film adaptations and extensions.

Transylvania is home to some of Europe's best-preserved medieval towns, most notably Brasov, featuring Old Saxon architecture and citadel ruins. Sibiu is special for its cobblestone streets and pastel-colored houses, whereas Sighisoara is adorned with a hilltop citadel, secret passageways and a 14th century clock tower. Tiny shops offer antiques and fine hand-made products by local artisans and artists.



Brasov



The real Dracula (Vlad Draculea), nicknamed Vlad Tepes (Vlad the Impaler), was a Romanian prince and military leader who fought the Turks in the Middle Ages. The fictitious character, Count Dracula, the Vampire, was created by an Irish writer, Bram Stoker, in 1897.

Visitors to Transylvania will also encounter stunning castles such as Bran, near Brasov, a Gothic fairy-tale structure, often associated with 15th century Wallachian Prince Vlad Tepes. In close proximity to Brasov and Bran are the fortified churches at Harman, with its massive 13th Saxon towers, and Prejmer, the largest fortified church in Southeastern Europe.



Bran Castle

The 15th-century Corvinesti Castle, the most beautiful in Transylvania, located near Hunedoara, has a sumptuous Knights' Hall, which can be used for gatherings or parties, as well as towers and buttresses reminiscent of the medieval times.

Transylvania's multi-ethnic heritage (including German and Hungarian) is delightfully apparent in the folk costumes, architecture, cuisine, music and festivals. Colorful century-old traditions are preserved in the small villages of Transylvania. People here still make a living through time-honored occupations such as shepherds, weavers, blacksmiths and carpenters.



The Apuseni Mountain range, in the western Carpathians, is a landscape of exquisite beauty and mystery. Here, you'll find ancient legends of mountain spirits and rare species of wildlife, along with 4,000 caves, many of which can be explored.

Wallachia is another historical and geographical region of Romania. It is situated north of the Danube and south of the Southern Carpathians.

First documented in 1459 by Vlad Tepes, Bucharest is the main city of the region and Romania's capital. Bucharest has lots of cultural attractions: 37 museums, 22 theaters, 18 art galleries, opera houses and concert halls await your visit.

The best way to explore Bucharest is to take a stroll along Calea Victoriei to Piata Revolutiei, site of the Romanian Athenaeum and the former Royal Palace, now the National Museum of Art. The old city center is one of the most beautiful touristic landmarks, indicative of why Bucharest was known as "Little Paris" in the 1920s, with the second largest building in the world, the Palace of Parliament. According to the World Records Academy, The Palace of Parliament, located in Bucharest, is the world's largest and most expensive civil administration building in the world. It also ranks as the biggest office building in Europe (3.9 million square feet/340,000 m2) and second-largest in the world, after the U.S. Pentagon. More than a million tons of marble, steel, crystal and wood have been used to build this palace! Beyond Bucharest, the foothills of Wallachia give way to the Carpathian Mountains.



Peles Castle

Just an hour and a half north off Bucharest is the beautiful Prahova Valley, where the popular ski resorts of Predeal, Busteni and Sinaia are located. Sinaia is also home to the magnificent Peles Castle - a masterpiece of German neo-Renaissance architecture, being considered one of the best-preserved royal castles in Europe. In the summer time, these resorts are starting points to hiking trails in the nearby Bucegi Nature Park.

A must stop for art lovers is the town of Targu Jiu on the banks of the Jiu River. This former market town is closely associated with Constantin Brancusi, the Romanian artist who is considered worldwide to be the founder of world modern sculpture.

Some of Romania's most tranquil monasteries can be found in this region, including Horezu, a masterpiece of the 'Brancovenesti' architectural style and a designated UNESCO World Heritage site. Horezu is also a renowned pottery center, where travelers can marvel at the colorful pottery created in local workshops by talented artisans.



Church of the Three Hierarchs

Moldova rivals Transylvania when it comes to rich folklore, natural beauty and astonishing history. Over the past 500 years, history, culture and religious life have molded Iasi, the cultural capital of Moldova. Iasi boasts an impressive number of Orthodox churches, almost 100, most of them located in the Golden Plateau, representing the nucleus of the city, around which the city developed over the centuries. One of the most famous monuments in the city is the stunning Church of the Three Hierarchs, built in 1639. Another major landmark in Iasi is the neo-gothic Palace of Culture, built between 1900-1926, currently housing the Ethnographic Museum, the Art Museum, and the History Museum of Moldova.

In Moldova one can also find Ceahlau National Park, Romania's Olympus – the sacred mountain of the Dacians, the forefathers of the Romanian people. species of birds can be seen in the park area. The Bicaz Canyon was dug by the waters of Bicaz River and it serves as a passageway between the Romanian provinces of Moldova and Transylvania.

Nestled in the rolling hills of northern Moldova is the region of Bukovina, home to one of the world's greatest art treasures: the UNESCO World heritage sites of the Painted Monasteries of Bukovina. Built in the 15th and 16th centuries and featuring colorful exterior frescoes depicting dramatic religious scenes, these richly decorated places of worships are unique in the world.

The most famous of these, often called "the Sistine Chapel of the East" is Voronet Monastery. Erected in 1438 by Stephen the Great, Voronet's most stunning feature is a Last Judgment fresco painted – as in all the churches – on the exterior façade. The blue paint that has miraculously never faded is known throughout the world as 'Voronet blue'. The artists here worked in isolation, guarding their trade secrets and, to this day, the composition of the paint remains a mystery.

Other painted churches not to be missed include Sucevita, with its distinctive greens, and Humor, where the frescoes are predominantly red. Also located nearby are Arbore, Dragomirna, Moldovita and Putna monasteries.



Suceava

The town of Suceava may be the best starting point for a trip to the monasteries. Once the capital of Moldavia (1375-1565), it has some noteworthy attractions of its own, such as the remains of the Fortress of Suceava built in 1388. Its history stretches back to the Palaeolithic period when the first inhabitants settled here. The Dacians left vestiges of their culture, traditions and Roman influence during the 2nd and 3rd centuries. Later, more than 600 years ago, the small settlement turned into a city, and became capital of Moldavia. For two centuries Suceava was the main commercial and political centre of the province. It peaked during the rule of Ștefan cel Mare (Stephen the Great), who built a church every time he defeated an enemy army. After a period of decline and Austrian occupation, the county became a Romanian territory again in 1918. After the Second World War, the city was heavily industrialised while retaining its historical traditions and fame.



Hanul Domnesc



The history of Northern Moldavia, from the oldest times up to the Second World War, is shown in the 27 rooms of the History

Museum. Other precious objects discovered in the region are exhibited in the Treasury Room, which also has displays of coins, jewellery, weapons, medals and clothing accessories.

The History Museum is part of the Bucovina Museum Complex, which also contains, among others, the Hanul Domnesc Ethnographic Museum, the Bucovina Village Museum, the Museum of Natural Sciences, a planetarium and memorial houses of the cultural personalities who lived in the city.

The equestrian statue of Ștefan cel Mare Suceava is a bronze monument dedicated to the Moldavian ruler Stephen the Great. The statue is located in the Șipote Park, near the fortress of Suceava. The statue is the biggest work of its kind in the country with a total height of 23 meters (including the base) and can be seen from every part of the city.

The religious heritage of Suceava is famous due to the historical churches that adorn the city, and the many monasteries in the surrounding countryside. The oldest is the Church of Saint George, which dates back to the 14th century. The church which stands near to the Princely Court was the metropolitan cathedral of Moldavia, where Ștefan cel Mare was crowned. Armenian traders and craftsmen, who formed an important community in the city, erected the Saint Cross Church almost 600 years ago. A century later, the Saint Nicholas Church was built.

The Fortress of Suceava is attested in 1388 and built during the reign of Peter I. Alexander the Good strengthened the defenses of the city by a wall of defense to the first entry located on the southern side of the fort. Four defensive elements can be noticed: the moat, the access bridge, the outer security wall and pitfalls that historians have given the name "rat race".

The defense made it impossible to get into the city without the approval of the interior ministers and supporters of Moldova's interests. The interior of the fortress were partially restored to illustrate the court life and to show how the princes of Moldavia were living. The courtyard was beautifully paved with stones in those days. Various rooms are still visible today: prison, steam bath, cellar, chapel.



Bucovina Village Museum is an outdoor museum of Suceava, which highlights the cultural and architectural heritage of Bukovina folk traditions. Established in the 70s, the museum has experienced major growth and expansion since the 90s and now has a total of 30 objectives: traditional wooden houses, household, popular workshops, community buildings. It is located in the eastern part of Suceava, near the fortress. Bucovina Village Museum was included on the list of historical monuments of Suceava in 2004.

Programme

Sunday 24.07.2022

All day	Arrival of the participants - whole day (Stefan cel Mare University of Suceava - USV) - Lunch (boxes)
12:00 - 18:00	Visit Bucovina Village Museum, History Museum (Suceava)
	Set up stands
18:00 - 19:30	Dinner (USV restaurant)

Monday 25.07.2022

08:00 - 09:00	Breakfast (USV restaurant)
09:00 - 10:00	Set up stands
09:00 - 10:00	Information meeting for head of delegations (USV)
10:00 - 13:00	Exhibition
11:00 - 13:00	MILSET Europe General Assembly for member organisation' delegates (Bldg D USV)
13:30 - 14:30	Lunch (USV restaurant)
14:30 - 17:00	Astronomical Observatory Visit and socializing activities (USV Campus)
17:00 - 19:00	Official opening (Matei Visniec Theater Hall Suceava)
19:00 - 20:00	Dinner (USV restaurant)
20:00 - 22:30	International nations evening (English Garden USV)

Tuesday 26.07.2022

08:00 - 09:00	Breakfast (USV restaurant)
09:00 - 10:30	Exhibition & 10inSTEAM
11:00 - 13:00	Presentations of researchers CERN (Aula Magna Bldg E USV)
13:30 - 14:30	Lunch (USV restaurant)
14:30 - 18:00	ReCoNnect Campus LAB Experience & Exhibition (USV Campus)
18:00 - 19:30	Dinner (USV restaurant)
19:30 - 21:30	Visit of The Fortress (Suceava)

Wednesday 27.07.2022

08:00 - 09:00	Breakfast (USV restaurant)
09:00 - 13:30	Exhibition & 1-minute interview
13:30 - 14:30	Lunch (USV restaurant)
14:30 - 17:00	Exhibition & 1-minute interview (Bldg E USV)
17:00 - 18:00	Unset the projects (Bldg E USV)
18:00 - 19:30	Dinner (USV restaurant)
20:00 - 22:00	Romanian Night – Arcanul USV Folkloric Group (English Garden USV)

Thursday 28.07.2022

08:00 - 09:00	Breakfast (USV restaurant)
09:00 - 10:30	Workshops for participants - debate, speaking science, drama, karaoke, painting (CNPR, USV Campus)
10:30 - 12:00	Workshops for participants - debate, speaking science, drama, karaoke, painting (CNPR, USV Campus)
12:30 - 13:30	Lunch (USV restaurant)
14:00 - 18:00	Scientific Treasure Hunt (Suceava)
18:30 - 22:00	Gala Dinner

Friday 29.07.2022

08:00 - 09:00	Breakfast (USV restaurant)
09:00 - 16:00	Excursion or free time (information on the site)
18:00 - 19:00	Dinner (USV restaurant)
19:00 - 21:00	The closing ceremony & team presentation (USV Auditorium)
21:00 - 22:30	Farewell party (English Garden USV)

Saturday 30.07.2022

07:30 - 09:00	Breakfast (USV restaurant)
All day	Departure of participants - Lunch (boxes)

Projects


ALGERIA
Solar Cooker
Hakim Arab, Samy Riadh Babouri, Lounes Boukhalfa, Mhenna Hakem, Akli Mounsi
Weather Station
Aziz Hermine

BELGIUM
Automated Darts Robot
Gaëtan Barette
Brain box
Zya Bénac-Piscart, Lucie Prevot

BULGARIA
Comparative Assessment of the Antioxidant Characteristics and Adaptive Potential of Bivalve Species from Varna Lake in Response to Environmental Stressors
Georgi Pramatarov
Comparative Characteristics of Zooplankton Communities in Srebarna Lake and Malak Preslavets Swamp
Mohammad-Mourad Halwani

Amar Sadouni - Supervisor
Kamal Babouri - Head of delegation

Elisa Heyrman - Head of delegation

Konstantin Delchev – Supervisor

Mental State Recognition via Machine Learning Based on EEG Signals
Gabriela Chavgova

INDIA
System for guiding space junks back to Earth ecologically
Madhukulya Baibhabhi

ITALY

Ferdinando Catalano - Supervisor
Mauro Grandi - Supervisor
Vitalii Lisovyi - Supervisor
Alberto Pietro Pieri - Head of delegation

RENEWABOAT
Denis Antolini, Daniel Cecchetti (San Marino), Nicola Rossi
"If your lungs could scream" Electrostatic collection and spectrographic analysis of cigarette smoke
Federico Andreoletti, Manuel Doneda, Sonia Migliavacca

LUXEMBOURG

Sousana Eang – Supervisor (France)

A comparison of toothpaste at bacterial inhibition
Arvids Andersons (Latvia)
Analysis of sleeping patterns of high school students and its effects
Paulina Den Otter (Netherlands), Alexandra Senn (Poland)



MEXICO

Francisca Azuara Zumaya – Supervisor

Analysis of the expression profiles of miRNAs associated with metastasis in luminal-type breast cancer

Hector Alberto Aguirre Alarcon, Angel David Rodriguez Reyes

ECO-LUTION

Christian Espinoza Torres, Yoana Ignacia Mateo Hernández, Denisse Araceli Ortiz Salazar, Francisca Azuara Zumaya



NEPAL

Suresh Bhattarai - Head of delegation

Multipurpose Gas Sentience Bin with SMS Feature To Reduce Possible Health Risk

Suja Baral, Upasana Bista, Nandini Karna

Study of Temperature Variations in Different Greenhouse Models

Varun Rayamajhi, Aastha Sunar Shahu

The Varying Luminosity of Stars To An Observer Due To Atmospheric Conditions And Its Effects

Prakrish Acharya, Svanik Garg



ROMANIA

Dumitras Cristina Amalia – Supervisor
Greculeac Anca Viorica – Supervisor
Sutac Victor – Supervisor

Prosthetic device for replicating the natural step with the help of neural networks

Hulubeac Mihai - Alexandru, Grigoraş Antonie - Rareş

Stimulating the germination of old seeds using plasma water

Baluş Eliza – Maria, Tofan Ioana

NexusCAN

Dochia Tudor, Turculeţ Alexandru, Ungureanu Paul Andrei

Covid 19. Complications of combining some drugs with Dexamethasone

Botezat David Ionuţ, Comşa Mirela Elena, Hutanu Iuliana



SLOVAKIA

Marian Babincak - Head of delegation

Influence of hive location on varroa destructor abundance

Dana Trnkova



SLOVENIA

Simon Weiss - Head of delegation

Comparison Between Fixed Solar Panel and Sun Following Solar Panel

Jakob Čerič, Aljaž Kelc, Jurij Šuman



SOUTH KOREA

Sunju Kim - Supervisor
 Jihye Seok - Supervisor
 Hee Kune Lee - Head of delegation

Establishment of a Small-Aperture Astronomical Observation System with Adaptive Optics Applied
Seongheum Baek, Hyunwook Seo

Exploring hand cream supplements hand sanitizer
Hyolin Cho, Mansong Joo

Making malang malang natural tangtang ball
Goeun Kim, Jaemin Kim, Gaye Son, Huiyul Yang

Research on Astronomical Observations using an Astronomical Telescope and the Superposition of Light
Gwang-Seok Cho, Gyeong-Seok Cho, Hui-gwan Yang

Study on Exoplanets Through the Solar Magnetic Activity Analyzed with Machine Learning
Jeesung Lee

The Effect of NAD Precursors on the Cognitive Learning of Zebrafish (Danio rerio)
Seungmin Lee



SPAIN

Iván Nadal Latorre – Supervisor
 Francisco Marco Moreno - Supervisor
 Sergi Pujol Rigol - Supervisor
 Aina Solsona Pujol – Supervisor

A virtual tour of La Térmica (Roca Umbert, Granollers): enjoy it!
Alba Busquets Padilla

Can it be observed whether the enzyme bromelain from pineapple, Ananas comosus, is present in other members of the Bromeliaceae family and to what extent is its enzyme activity affected by temperature?
Raúl Sáchez Ramos

Orientation and shades influence on the electric current produced by a solar panel
Margarita Esteban Llanos

Study of the dependence of different variables in the half-life period of damped oscillations
Mónica Sancho Saiz

The first circumnavigation in history: the voyage of Magellan and Elcano
Héctor Jurado Castillo, Iván Nadal Latorre

Learning the plants language
Aitana Dempere Isach, Paola Mechó Romero

STEM with Sphero: Robots at Biology
Marc Pujadas Calcat, Iris Viñolo Flores



SWITZERLAND

Julián Cancino - Supervisor
 Cecilia Cancino-Infanti – Supervisor

Transfer of American models for predicting and analysing elections to Swiss referendums
Andri Hubalek

When magnets rotate: Investigation of Stabilized Halbach Arrays for Application in Magnetic Bearings
Michal Oskedra (Poland)



TURKEY

Belit Karaca - Supervisor
Cansu İlke Kuru - Supervisor
Senem Kızak - Head of delegation
Zerrin Benal Hepsogutlu - Head of delegation

**Bioinformatic Prediction of Coronavirus
(SARS-CoV-2) Mutations That Increase Contagiousness**

Murat Işık, Belit Karaca

**Development Of Paper-Based Origami
Biosensor Platforms For Colorimetric Detection Of Biocontaminants**

Devin Inan, Cansu İlke Kuru

Wound Follow-Up Diagnostic Treatment System Teknobant

Raif Toprak Yıldız, Enis Zorbazer

**Biotechnological Potential of
Anatolian Honey Bee (*Apis mellifera anatoliaca*)**

Venom in Cancer Research

Ildem Akgun, Idil Bildirici

Plant In The Sea, Eco-Friendly Biocomposite On The Land

Elif Çakici, İlayda Deran



Together in science and fun

Useful information

In Romania the **emergency number** is **112**

Wi-fi Internet access - user: ESE, pasword: ese-2022

0230966 - **taxi number** - 3RON/km (During the day) + 3RON (starting)

TPL (**Local Public Transport**) – 2,5RON (the last bus is at 10:30PM)

Exchange:

1EUR~ 4,90RON

1USD~ 4,80RON

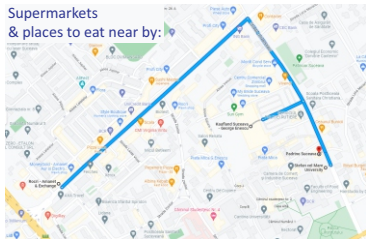
Useful words and phrases in Romanian

- | | |
|----------------------|--------------------------|
| • Yes / No | → Da / Nu |
| • Hi (informal) | → Bună / Salut |
| • Hello (formal) | → Bună ziua |
| • Thank you | → Mulțumesc |
| • You're welcome | → Cu plăcere |
| • Please | → Vă rog /Te rog |
| • Nice to meet you | → Încântat de cunoștință |
| • What is your name? | → Cum te cheamă? |
| • I am... | → Eu sunt |
| • Good morning | → Bună dimineața |
| • Good evening | → Bună seara |
| • Good night | → Noapte bună |
| • Goodbye | → La revedere |

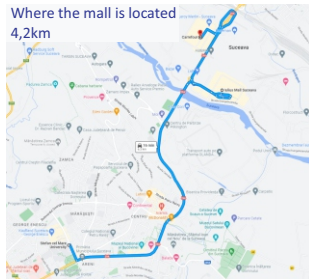
- Have a good day
- I don't understand
- Do you speak English?
- I don't know
- Can you help me?
- Where is the bus stop?
- Left
- Right
- Forward
- Back
- Where is...
- I'm lost
- How much does it cost?
- Open
- Closed
- Could I see the menu please?
- I would like...
- Check
- Do you accept credit cards?
- (Sparkling/still) water
- A coffee/tea
- Breakfast
- Lunch
- Dinner

- O zi bună
- Nu înțeleg
- Vorbiți engleza?
- Nu știu
- Mă puteți ajuta?
- Unde este stația de autobuz?
- Stânga
- Dreapta
- Înainte
- Înapoi
- Unde este / Unde e...
- Sunt pierdut
- Cât costă?
- Deschis
- Închis
- Pot să văd meniul, vă rog?
- Vreau...
- Notă de plată
- Acceptați plăți cu cardul de credit?
- O apă (minerală/plată)
- O cafea/ceai
- Mic dejun
- Prânz
- Cină

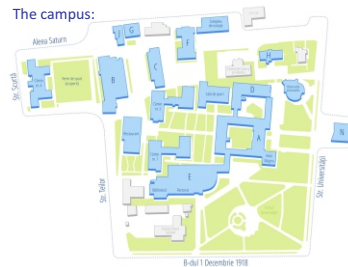
Supermarkets
& places to eat near by:



Where the mall is located
4,2km



The campus:



The route of the trip:

