



## PETNICA SCIENCE CENTER

The Petnica Science Center (PSC) is the independent non-profitable educational organization founded to help and support young people (age 14-19) who demonstrate an interest in science, technology and research that goes beyond regular school curricula. Since 1982 it is a national-level institution with a number of regional and international activities. Today, the Petnica Center is among leading institution in the world in the field of parallel-to-school sci-tech education of gifted students.



The Center is located in Petnica, a village about 7 km (4 m) east of Valjevo (W. Serbia), 99 km (60 m) SW of Belgrade. Valjevo has good and frequent bus and rail connections with Belgrade. The place was selected because of its natural attributes and its suitability for performing various practical and outdoor activities.



Educational programs in Petnica are not linked with school curricula and common models of school teaching. Targeting students of age 14-20, Petnica Center's educational activities cover a broad spectrum of disciplines in sciences, humanities, and technologies. The main goal is to help students to develop reasoning and observation skills, data collecting methods, argumentation and communication techniques, as well as abilities for continual learning and improving knowledge and experiences. PSC encourages participants to think free, to be logical and critical in reasoning, to cooperate with partners from different regions and cultural background.



The majority of the activities are designed for teenagers, but there also is a variety of programs for university students and school teachers. Each year about 2000 students from Serbia and abroad take part in some of 120 training courses, workshops and science camps in the Petnica campus. PSC has gained recognition for its innovative methods in science education, as well as for significant results in identifying and educating gifted and talented children and students.

With no marks, no rigid discipline, with flexible innovative programs, interactive teaching, modern equipment, with no regional or national limits for students, ready to support students' ideas and research projects, with a young staff, and a thousand enthusiastic scientists and teachers, Petnica Center is a heart of Serbian alternative education and, even more, a top popular happy place for young people hungry for fresh knowledge and understanding.



Each November Petnica's participants who have completed their science projects during summer camps, take part in the Annual Students' Conference where they have opportunity to present their results (and problems, difficulties, ideas...) both in form of poster and oral presentations to other students, lecturers and professional scientists. Written reports in form of real scientific papers are published in special edition "Petnica Papers".

Sci+Tech training activities cover a broad spectrum of disciplines such as Astronomy, Life-sciences, Electronics, Psychology, Chemistry, Geo-sciences, Physics, Anthropology, Archaeology, Mathematics, Industrial Design, Linguistics...



The main goal of educational activities is not to emphasize the scope of memorized facts, names, definitions, etc, but to improve students' thinking skills, rational and logical thinking, recognizing problems, to teach them how to design and manage projects, how to make functional conclusions, how to find reliable information sources, as well as to upgrade their communication skills.

There are various types of courses, science camps or workshops in the Petnica Center. Some activities take 3, 4, 5, up to 15 days (during summer). The same student can come in Petnica once in a year or two, three, even four times attending different and complementary activities. He or she can apply for the next year to take part in more complex and demanding activities or to experience individual or team-based science projects.



The main goals of this program are:

- To identify gifted secondary-school and university students from all parts of country, especially from provincial and poor regions and give them intensive individualized extracurricular education;
- To enable the best students to do scientific projects based on real problems and carried out on professional scientific equipment and under the supervision of the best scientists and science teachers;
- To instruct young science teachers on how to apply up-to-date scientific concepts, knowledge and educational methods;
- To initiate cooperation and exchange of knowledge, experience and ideas among undergraduates and graduates who study at different universities and different programs;



Apart from relatively small permanent staff and technical services, there are more than 800 enthusiastic guest teachers, lecturers and mentors who are carefully selected from over hundred university schools, laboratories or industrial R&D centers. Today, more than a half of them are Petnica Center's alumni.



Each year students from more than 500 secondary schools from all parts of Serbia + about 200 students from nearby countries apply to Petnica. The Petnica Center pays special attention to the students from provincial schools and from undeveloped regions, but it is fact that the percent of teenagers interested in sci+tech is higher in major cities and regions.



PI (Petnica International) is popular two-week long summer science camp open for participants (age 18-20) from all over the world. Participants have the unique opportunity to experience interesting lectures, experiments, talks and to make small-scale research projects in a broad scope of areas. Each year there are a dozen courses and workshops in English language for international students.

The Petnica Science Center is always ready to share its experience and ideas with partner organizations. From time to time the Petnica Center hosts training courses for groups of teachers from Slovenia, Croatia, Macedonia, Russia, Italy, Hungary, Israel... It also promote active co-operation between similar project abroad such as exchange of students and lecturers.



Parallel to regular training programs for teenagers, the Petnica Center hosts a number of specialized meetings and conferences, mostly focused on young scientists and PhD students. During 2013-2018 such activities successfully covered a broad spectrum of topics – from Archaeology, Astrophysics, Analytical Chemistry, Bio-medicine, Machine Learning, Psychology, Life-sciences, up to Musicology, Photography, Design and 3D printing.

“Petnica Science Day” is a new single-day activity where school science clubs or groups of curious pupils and students of age 7-18 with their teachers can spend a whole day in the Petnica Center. A number of attractive experiments and interactive workshops are available for them. Respecting demands of teachers, these activities can be focused on one or more school subjects.



The heart of the Petnica Center is in its laboratories. There are seven excellent equipped laboratories – for Biology, Biochemistry, Chemistry, Geo-sciences, Archaeology, Physics and for Electronics&Computer Science, plus Astronomical observatory. Each lab can serve various purposes, such as experimental demonstrations, teacher training, students’ individualized practical training, research projects, etc.

The Petnica Center’s hotel (dormitory) can host up to 170 people in comfortable rooms (bathroom, AC) with 1-4 beds. Within the hotel there are a dozen of meeting and lecture rooms. The restaurant can serve up to 250 person at the same time. Petnica Science Library is multifunctional facility with collection of about 50,000 books and magazines and thousand of digital publications.



The Petnica Center is functional and active thanks to many small and mid-size private sponsors, donations of Serbian and foreign companies, scientific institutes and universities, as well as support from Serbian government. In the last couple of years, the most serious support comes from industrial sector. Such support and deep understanding of the importance of PSC’s mission in transforming Serbian education and science, enables PSC to include in its challenging programs almost every truly gifted and talented student regardless of his/ her family income or available school/local funds.



Only four kilometers SW from Petnica is the river Gradac which has been placed under special protection because of its beauty and preserved nature, a number of caves, diverse flora and fauna, and clean, potable water. On the south and SW, Petnica is surrounded by the mountain range (1,200 m high) covered with dense forests, meadows, and numerous rivers and gorges. It makes students’ outdoor/field activities very popular and attractive.



What makes the Petnica region famous is the Petnica Cave. This cave had considerable influence on early human settlements in the area. It is composed of complex underground canals, spacious halls, stalactites, stalagmites, an underground lake and river, and rare plants and animal life. It is also a rich paleontological and archaeological site. Adjacent to the cave is the archaeological site – the remains of a 7,000 years old Neolithic village