

Schedule of the Novi Sad workshop

Place: Amphitheatre in Rectorate Building University of Novi Sad, Dr Zorana Đinđića 1

March 20, 2022

- 13:00-14:45** History and structure of the Matej Bel University in Banska Bystrica, educational methods, communication with and among staff members and students
- 15:00-16:45** Education of science subjects at the Faculty of Natural Sciences, review of the past national and international projects, technical and human resources in education, use of advanced technologies
- 17:00-18:45** Review of the achieved goals in TeComp project, expectations for the future
- 18:45-19:30** Reviewing of financial documentation – UNS and UNIKG

March 21, 2022

- 9:00-10:45** Some good practices for students instruction (Dr. Boris Tomášik)
Abstract: Lectures are arguably among the least effective means of teaching, as students stay rather passive. I will review some techniques and approaches, established in the literature, which lead to student activity and thus potentially increase the efficiency of instruction. Among examples, used in our case in physics teaching are: flipped classroom, peer instruction, just-in-time teaching. I will also comment on their applicability for online teaching in case of suspension of the in-person classes. Finally, outreach activities on particle physics will be described, both in in-person and online editions.
- 11:00-12:45** Problems in mathematics university teaching (Dr. Vladimír Janiš)
Abstract: A lot of university students fail in their first year at the examination on different mathematical subjects. In some years, the percentage of failures approaches or even exceeds one half of the student population. We try to address the reasons of this state and suggest ways how to make the transition from the high school system to the university system more fluent for the students.
- 12:45-14:00** Lunch break
- 14:00-15:45** Strengthening of the competencies of students at the department of computer science (Dr. Alžbeta Michalíková)
Abstract: Computer science belongs to the subjects with the most active research. In the first part of the lecture, we will present the students' possibilities to study at the

department of computer sciences. We will mention special laboratories and seminars which could students attend at this department. Then, as an example, we will look at the way how is teaching the subject – Fuzzy Sets. Fuzzy Sets are special structures that work with vague terms of ordinary speech. Together with Neural Networks and Evolutionary Algorithms, they belong to Soft Computing methods, which represent different ways how to model and solve the problems of current world.

16:00-17:30 Reviewing of financial documentation – UB, UGJ and UNIKO

19:00- Dinner at the restaurant Macchiato Kuca, Željeznička 10

March 22, 2022

9:00-10:45 Round table: Problems in university education of mathematics, physics and computer science

11:00-12:45 Teaching of the biological subjects, their connection to research and practice (Dr. Ingrid Turisová)
Abstract: During the lecture, biological subjects will be introduced, which are taught within accredited study programs at the Faculty of Natural Sciences with an emphasis on botanical disciplines. We will talk about how the teaching takes place, how students are motivated (field exercises, domestic and foreign excursions, work with live handicapped animals, etc.), how they are connected during their studies with our research grants or practical tasks arising from social needs.

12:45-14:00 Lunch break

14:00-15:45 Citizen science tools for distance learning of botanical cycle disciplines in the pandemic time and beyond (Dr. Mykyta Peregrym)
Abstract: Every country and even every university have been looking for optimal ways for their epidemic situation according to country restriction rules. We have generalized this experience, as well as it has been developed a protocol on example iNaturalist platform (<https://www.inaturalist.org/>) for effective using of citizen science tools not just for distance learning of botanical o zoological cycle disciplines in the pandemic time and beyond, but also for collecting of valuable data about plant distribution during this process.

16:00-18:30 Excursion to the Petrovaradin Fortress

March 23, 2022

- 9:00-9:45** Palynology – Use today to know the past (Dr. Katarína Trnková)
Abstract: Palynology and its use in the reconstruction of environmental conditions in the past, paleolimnological research focused to climatic evolution of the Central Europe in post glacial period.
- 10:00-10:45** Microbial Ecology of Water and Soil (Dr. Katarína Trnková)
Abstract: Ecology and taxonomy of free living amoebae, new emerging pathogens, the study of the macro ecological patterns of host and parasite biodiversity, relationships among parasites, hosts and their environments by the modern molecular methods, the detection of microbial biofilms in man-made water environments.
- 11:00-12:45** Round table: Problems in university education of biology, nature conservation and environmental sciences
- 12:45-14:00** Lunch break
- 14:00-15:00** Soft introduction to infinitesimal calculus (Dr. Vladimír Janiš)
Abstract: Infinitesimal calculus belongs to the principal parts of the mathematical education at a university. The notion of a limit is crucial in most following areas, mainly mathematical analysis, but also probability and statistics. Any misunderstanding in these phases prevents further understanding, leads to formal education and failures. We present a way how the understanding of the limit notion can be made more accessible to high school graduates.
- 15:00-19:00** Visit to Fruska gora monasteries (Jazak and Vrdnik)



March 24, 2022

- 9:00-10:00** Presentation of the newly established Centre for the methodology of teaching mathematics, informatics, and natural sciences at Faculty of Sciences, University of Novi Sad (dr Zorana Lužanin)
- 10:00-11:00** Sharing of experiences of organization of courses for young teaching staff at Department of Mathematics and Informatics, University of Novi Sad (dr Andreja Tepavčević)
- 11:00-12:00** Sharing experiences about online teaching and online student knowledge verification
- 12:00-13:00** Lunch break
- 13:00-14:15** Discussion of the plan of further cooperation of the University of Novi Sad and University of Gjirokastra