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SLOVAK UNIVERSITY OF
TECHNOLOGY IN BRATISLAVA
FACULTY OF CHEMICAL
AND FOOD TECHNOLOGY

ChemTeach
Improvement the quality of chemistry teaching
in VET in Bosnia and Herzegovina
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Educational course for high school teachers in Banja Luka
Faculty of Natural Sciences and Mathematics, University of Banja Luka
Banja Luka, Bosnia and Herzegovina

June 9–13, 2025

AGENDA

Monday, June 9, 2025

9:30-10:00	Registration
10:00 – 10:15	Welcome Remarks and Training Program Overview (<i>Prof. Milica Balaban, PhD; Prof. Ing. Ivan Špánik, DrSc.</i>)
10:15 – 10:40	Chemistry in Education: Beyond the Formula – Time for a New Role (<i>Prof. Milica Balaban, PhD</i>)
10:40 – 11:05	Integrating the STEAM Approach in Modern Education: Fostering Creativity and Critical Thinking (<i>Prof. Sanja Partalo, PhD</i>)
11:05 – 11:20	Coffee break
11:20 – 11:45	Enhancing Biochemistry Teaching Through the STEAM Framework: A Cross-Disciplinary Approach to Deeper Learning (<i>Prof. Dino Hasanagić, PhD; Prof. Sanja Partalo, PhD</i>)
11:45 – 12:10	Chemistry and Science Diplomacy: Molecules of Peace in the 21st Century (<i>Prof. Nina Sajić, PhD</i>)
12:10 – 12:20	Discussion
12:20 – 13:30	Lunch
13:30 – 17:00	Secondary Schools Visit

Tuesday 10.6.2025.

09:00 – 10:00	Educational lectures for the popularization of chemistry – Part I Homo olfactoricus (<i>Prof. Ing. Peter Szolcsanyi, PhD..</i>)
10:00 – 10:15	Discussion and questions
10:15 – 11:15	Educational lectures for the popularization of chemistry – Part I Isotope ratio mass spectrometry – theory and application (<i>Mgr. Liudmyla Khvalbota, PhD.</i>)
11:15 – 11:30	Discussion and questions
11:30 - 11:45	Coffee break



11:45 - 12:45	Educational lectures for the popularization of chemistry – Part I Booze and hangover (<i>Prof. Ing. Peter Szolcsanyi, PhD.</i>)
12:45 - 13:00	Discussion and questions
13:00 - 14:00	Lunch
14:00 – 15:30	Round table on advancing chemistry teaching with stakeholders (<i>Prof. Milica Balaban, PhD; Prof. Ing. Ivan Špánik, DrSc; Mgr. Liudmyla Khvalbota, PhD; Prof. Ing. Peter Szolcsanyi DrSc; Cvjetana Pejaković, BSc; Mladena Malinović, MSc; Marija Stojaković, MSc; Dejana Savić, MSc</i>)

Wednesday, 11.6.2025.

09:00 –10:00	Educational lectures for the popularization of chemistry – Part II From poison to drug (<i>Prof. Ing. Peter Szolcsanyi PhD.</i>)
10:00 - 10:15	Discussion and questions
10:15 –11:15	Educational lectures for the popularization of chemistry – Part II Food authenticity assessment (<i>Prof. Ing. Ivan Špánik, DrSc.</i>)
11:15 –11:30	Discussion and questions
11:30 –11:45	Coffee break
11:45-12:45	Educational lectures for the popularization of chemistry – Part II Medicinal marijuana (<i>Prof. Ing. Peter Szolcsanyi PhD.</i>)
12:45-13:00	Discussion and questions
13:00-14:15	Lunch
14:15 - 16:15	Exploring chemistry through laboratory demonstrations: Determination of stoichiometry and stability constant of iron(III)-salicylate complex (spectrophotometry), Determination of hypochlorite in bleach (iodometric titration) (<i>Ing. Martin Němeček, PhD; Ing. Tatiana Filipová</i>)
16:15 - 16:30	Coffee break
16:30 –17:15	Exploring chemistry through laboratory demonstrations: Exploring the Role of Ingredients in Cosmetic Products (<i>Ing. Marta Fodorová</i>)
17:15 - 17:30	Laboratory session reflection

Thursday, 12.6.2025.

09:00 –10:30	Creating educational video tutorials: A guide for secondary school teachers (<i>Ing. Krištof Urban, Prof. Ing. Ivan Špánik, DrSc.</i>)
10:30 –10:45	Coffee break



10:45 –12:15	Creating educational video tutorials: A guide for secondary school teachers (Ing. Krištof Urban, Prof. Ing. Ivan Špánik, DrSc.)
12:15-13:30	Lunch
13:30 –14:30	Exploring chemistry through laboratory work: Maillard's reactions - preparing caramel lollipops (Ing. Lucie Křivčíková)
14:30 –15:00	Exploring chemistry through laboratory work: Detection of acids in milk products (Ing. Lucie Křivčíková)
15:00 –15:15	Coffee break
15:15 –15:40	Exploring chemistry through laboratory demonstrations: Determination of vitamin C in fruit (Ing. Lucie Křivčíková; Ing. Květa Koryčánová, PhD)
15:40 –16:25	Exploring chemistry through laboratory demonstrations: Dactyloscopy (Ing. Květa Koryčánová, PhD)
16:25 –16:45	Exploring chemistry through laboratory demonstrations: Detection of human salivary amylase (Ing. Květa Koryčánová, PhD)
16:45-17:00	Laboratory session reflection

Friday, 13.6.2025.

09:00 –10:00	Project management, administration and dissemination (podcasting, various international channels for further development) (Mgr. Justina Pluktaité)
10:00 –10:15	Coffee break
10:15 –12:15	Immersive technology in education (XR, 360 degree photo/ videos, safety) with practical activities using MetaQuest3 Wellbeing in digital education (Mgr. Justina Pluktaité)
12:15 – 13:30	Lunch
13:30 – 15:00	Management board meeting about the interim report (Prof. Ing. Ivan Špánik, DrSc. And management board)